



General Plan and Environmental Impact Report

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UNIVERSITY OF CALIFORNIA

ADOPTED BY CITY COUNCIL OCTOBER 27, 1992

COMMUNITY VISION

Highland will provide the benefits and amenities of a suburban community while maintaining a small town quality. We envision a community with a rural atmosphere designed for families to live and pursue a high quality of life and be proud to be a part of Highland. The City of Highland will be economically secure, will work with adjacent communities to ensure an overall balance of housing, commerce and industry, and will

establish an equilibrium between urban and rural settings. Through the creation of a distinct and separate identity, the City will have regional recognition as a community that provides for the unique needs of its citizens and balances those needs for the common good of all.



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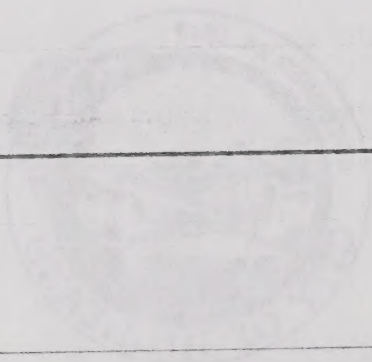
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RESOLUTION NO. 92-101

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF HIGHLAND ADOPTING THE PROPOSED LAND USE, CIRCULATION, PUBLIC SERVICES AND FACILITIES, OPEN SPACE AND CONSERVATION, PUBLIC HEALTH AND SAFETY, NOISE AND HOUSING ELEMENTS OF THE GENERAL PLAN

WHEREAS, Section 65302 of the California Government Code directs all cities and counties to prepare General Plans; and

WHEREAS, the City of Highland has determined it is appropriate and necessary to adopt a General Plan; and

WHEREAS, the public participation in the development of the General Plan included distribution of newsletters, establishment of a citizen advisory committee, and provision of notice of public hearing pursuant to State law; and

WHEREAS, a duly noticed public hearing was held before the Planning Commission on September 15, September 29, October 6, and October 20, 1992, and before the City Council on October 21, and October 27, 1992, at which time all interested parties were given the opportunity to be heard; and

WHEREAS, the City Council at its meeting of this date herewith adopted a Resolution certifying that the Environmental Impact Report (EIR) relating to the General Plan as being complete and adequate insofar as the Land Use, Circulation, Public Services and Facilities, Open Space and Conservation, Public Health and Safety, Noise and Housing Elements of the General Plan are concerned, and that the EIR was completed in compliance with CEQA, State CEQA Guidelines, and the City's Rules to Implement CEQA; and

WHEREAS, the City Council at its meeting of this date herewith adopted a Resolution making certain findings regarding the environmental impacts of the proposed General Plan; and

WHEREAS, the Planning Commission and City Council have reviewed and considered the information and public testimony presented the public hearings and in the proposed document and staff reports.

NOW THEREFORE BE IT RESOLVED that the City Council of the City of Highland, California hereby adopts the Land Use, Circulation, Public Services and Facilities, Open Space and Conservation, Public Health and Safety, Noise and Housing Elements and Community Design Appendix of the General Plan based on the following:

with both Village Residential and Village Commercial designations to allow for the revitalization of this area.

5. Base Line is a major commercial arterial in the City, and is key to the stability and vitality of Highland's economy. Many of the commercial parcels along Base Line are too narrow and too shallow to be efficiently used for retail endeavors. In addition, the Base Line corridor suffers from poor urban design, and does not give the appearance of being a successful commercial boulevard. In recognition of the specific problems of commercial uses along Base Line, the General Plan designates commercial lands along Base Line as BASE LINE COMMERCIAL (BC). The purpose of this category is to provide for the expansion of commercial uses, and to provide for the establishment of specific design standards for the boulevard.
6. Certain areas of the City which are appropriate for the development of non-residential use, are sensitive in their physical relationship to residential uses. These areas are typically suited for OFFICE/PROFESSIONAL (O/P) development, and have been so designated.
7. Other areas suitable for commercial or office/professional use are sensitive in that portions of the site may be appropriate for retail endeavors, while other portions of the site might only be appropriate for office uses; still other portions might be subject to restrictions due to flight operations from Norton Air Force Base. The result is that site-specific design considerations will need to be applied to these individual properties. To facilitate sensitive design of these properties, a PLANNED COMMERCIAL (PC) category is designated.
8. Other areas which are appropriate for a wide range of commercial uses are designated GENERAL COMMERCIAL (GC), while areas appropriate only for neighborhood scale commercial uses are designated NEIGHBORHOOD COMMERCIAL (NC).
9. Along with residential and commercial development, certain portions of the City of Highland are appropriate for industrial uses, as well as a mix of commercial, office, and industrial use. To this end the General Plan Land Use Element designates such areas as BUSINESS PARK (BP) or INDUSTRIAL (I).
10. The success of any community depends not only on the existing and quality of private uses of land, but also upon the existing of public and institutional uses. The General Plan therefore designates certain lands as PUBLIC/INSTITUTIONAL (P) in order to ensure their availability.

I. ENVIRONMENTAL IMPACT REPORT

1. The Environmental Impact Report prepared for the General Plan identified potential significant impacts associated with the implementation of the Plan, including, but not limited to potential impacts on agricultural lands, mineral, air, water resources, and traffic circulation.
2. The findings, information, and support set forth in the Environmental Impact Report prepared for the proposed General Plan and the Statement of Significant Environmental Effects and Mitigation Measures are incorporated herein by reference and constitute finding of the City Council in this matter;

II. LAND USE ELEMENT

1. Certain areas within the City of Highland are rural in character, and residents enjoy the keeping of horses on equestrian estates. The Land Use Element of the General Plan recognizes the existence of rural lifestyles, and protects such areas, in addition to providing areas for future development of equestrian estates.
2. In the past, Highland's residential areas were developed with a wide variety of housing types. The General Plan organizes the designation of residential properties and recognizes the existing East Highland Ranch Development by designating the following land use categories: LOW DENSITY RESIDENTIAL (LD), MEDIUM DENSITY RESIDENTIAL (MD), HIGH DENSITY RESIDENTIAL (HD), HISTORIC VILLAGE DISTRICT (HVD) AND PLANNED DEVELOPMENT (PD).
3. Large areas were designated for high density multiple family use, much of which did not have sufficient public improvements to support development at identified densities. In addition, portions of the developed multiple family areas have significantly deteriorated. With the impending conversion of Norton Air Force Base to civilian use, a large part of the support base for future multiple family development will be lost. Therefore, the City Council has found it necessary to scale back the amount of the land designated for multi-family development from that previously designated by the City. In so doing, the General Plan retains options for the utilization of large deep lots within the Low Density Residential category for secondary units, not to exceed 6 to the acre, where infrastructure support is available, providing that the predominant single family character of the area is maintained.
4. The Highland community has a rich history, much of which is represented in the Highland Historic District. In order to protect the historic character of this District, and to provide for the revitalization of this area, a HISTORIC VILLAGE DISTRICT (HVD) category has been created

11. The Santa Ana River Wash, City Creek, and other sensitive areas within the City encompass significant environmental values, as well as present significant hazards. As a means of balancing the need to protect environmental resources, provide for the managed production of resources, protect the public health and welfare, and recognize legal property rights, an OPEN SPACE (OS) category has been created to permit such development as is consistent with existing environmental values and hazards.
12. In particular, mineral extraction operations present both an opportunity for the City of Highland and a significant potential adverse impact upon local quality of life. The General Plan contains policies identifying the circumstances under which the City would approve new mineral extraction uses or expansions of existing uses.
13. The existing boundaries of the City of Highland do not follow logical lines. As a consequence the General Plan contains policies related to establishing logical City limits which will facilitate the efficient provision of services.
14. The use of Federal Aviation Regulations, State law and State guidelines related to airport land use planning in the preparation of development regulations and review of land uses subject to these regulations will provide an adequate level of protection to people and property within the City.
15. Given that Norton Air Force Base is in the process of being converted to civilian use, the application of regulations and guidelines other than the AICUZ study is appropriate.

III. CIRCULATION ELEMENT

1. In attempting to provide safe and appropriate circulation transitions with surrounding jurisdictions, the Circulation Element of the General Plan proposes roadway widths and street alignments that are consistent with the circulation plans of the cities of San Bernardino and Redlands, as well as the County of San Bernardino.
2. The Circulation Element identifies major roadway limitations and proposes improvements to eliminate service deficiencies. Based on this analysis, the City will undertake a more detailed analysis of intersection service levels and plan appropriate improvements to improve service in deficient areas, as funding permits.
3. The City presently has varying road rights-of-way, street widths, open drainage channels, gaps in sidewalks, and various other potential hazards or impediments to vehicular and pedestrian travel. The Circulation Element

includes policies to alleviate these limitations as funding permits.

4. Truck travel on City streets is presently restricted by adoption of truck routes within the City. Additionally, the Circulation Element includes policies to limit or direct truck traffic onto appropriate roadways to minimize potential impacts to and conflicts with City residents or sensitive land uses.
5. Circulation in and around Highland will be fundamentally affected by completion of the Route 30 Foothill Freeway. Policies contained in the Circulation Element encourage coordination of planning and construction projects related to the Route 30 Foothill Freeway. Additional study will be needed as specific freeway plans and local street needs are identified.
6. The Circulation Element provides for a local transportation network that will meet the needs of the various land uses proposed, a balance among private vehicle, public transit, bicycle, and pedestrian circulation to meet the unique needs of moving people and goods in and around the City of Highland.

IV. PUBLIC SERVICES AND FACILITIES ELEMENT

1. In order for the City to ensure the adequate provision of services the Public Services and Facilities Element recognizes the need for ongoing coordination of development activity with the provision of public services and facilities in order to eliminate gaps in service provisions, maximize the utilization of existing and proposed public facilities, provide efficient and economical public services, and to achieve the equitable sharing of costs of such services.
2. The Public Services and Facilities Element recognizes the City's need to cooperate in the development of school/facility planning, which will ensure provision of adequate school facilities and quality educational programs in a manner consistent with the goals and strategies of the Highland General Plan with respect to facility location, use type, timing, funding, recreational and social joint use programs.
3. The City recognizes the need to maintain a system of cultural facilities and social services sufficient to meet the needs of Highland residents.
4. Recognizing the City's budget constraints the Public Services and Facilities Element works to achieve a fiscally solvent, financially stable community.

V. OPEN SPACE AND CONSERVATION ELEMENT

1. The City recognizes the preservation of agricultural lands within the Greenspot Sphere as commercial operations if possible, or within residential developments if not. Within the Greenspot Sphere, lower densities are utilized to protect agricultural lands, scenic resources and topographic features.
2. The City contains several regionally important river and stream channels. The Open Space and Conservation Element contains policies to protect valuable waterways both for their flood control value as well as for the vegetation and wildlife communities they support.
3. The State is presently experiencing its seventh year of drought. To reduce dependence on imported water, the Open Space and Conservation Element contains policies to reduce domestic and business-related water use, and to encourage the expanded use of reclaimed water for appropriate uses.
4. To reduce its dependence on limited resources, the Open Space and Conservation Element contains policies on energy conservation, and alternative energy sources, fuels, and systems.
5. The South Coast Air Basin is considered to have some of the poorest air quality in the nation. To reduce local and regional air pollutant emissions, the Open Space and Conservation Element contains policies designed to reduce vehicular trips and miles, which in turn reduce vehicular emissions. Policies include public transit, bicycle and pedestrian access, and public information programs.
6. The disposal of solid waste has become not only a local but a regional, state, and national concern during the past decade. To minimize the production of municipal wastes, as well as to comply with recent changes in state law, the Open Space and Conservation Element contains policies to promote the reduction of solid waste sources, recycle waste materials that would otherwise require landfill space, and promote public awareness of solid waste problems and potential solutions.
7. The City contains various open vistas and natural views. The Open Space and Conservation Element contains policies to preserve natural views, preserve scenic beauty, and provide open spaces for outdoor recreation while protecting health and safety.
8. Several of the large washes and stream channels within the City contain regionally significant construction aggregate resources. The Open Space and Conservation Element contains policies to preserve remaining mineral

resources where appropriate based on various environmental constraints.

VI. PUBLIC HEALTH AND SAFETY ELEMENT

1. The City of Highland faces a significant potential threat from seismic activity that could produce surface rupturing, groundshaking, ground failure, and liquefaction. The City's Public Health and Safety Element contains policies designed to provide adequate protection against these conditions for its residents. Such policies include compatibility tables for various types of land uses, building design, and slope restrictions.
2. Several stream channels within the City represent potential flooding threats. The General Plan contains policies to eliminate potential flood threats through building setbacks and land use restrictions.
3. The City's Public Health and Safety Element contains policies designed to prevent threats to public safety from wildland fires. Specific policies address adequate water service, fire station location and construction, and building restrictions.
4. As with all suburban communities, residents of the City face the potential threat of crime. The Public Health and Safety Element contains policies for site and building design to minimize the risk of crime based on the concept of "defensible space".
5. The transport, storage, use, and/or the accidental release of hazardous materials represents a potentially serious threat to public health and safety. The General Plan contains policies aimed at preventing accidental release, limiting the transport of these materials through sensitive areas, and limiting land uses that utilize these substances.
6. All of Southern California faces a continuing threat from major earthquakes. In response, the Public Health and Safety Element encourages local disaster preparedness programs to minimize this potential risk.

VII. NOISE ELEMENT

1. There are or will be a number of significant noise sources within and adjacent to the City, including San Bernardino Regional Airport/Norton Air Force Base, the Route 30 Foothill Freeway, a local gun club, and especially traffic on major roadways. To prevent potential health impacts, the Noise Element of the General Plan contains policies designed to limit or control exposure of City residents to unwanted or harmful noise. Policies include land use, site, and building

location criteria, insulation standards, and setbacks from roadways.

VIII. HOUSING ELEMENT

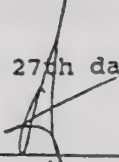
1. The Housing Element identifies local housing problems and needs, and outlines strategies to meet the housing needs of various groups within the City of Highland. During development of this Element, special attention was paid to preventing discrimination and affording housing opportunities to all socioeconomic levels.
2. As required by state law, the Housing Element contains a Housing Needs Assessment, Inventory of Resources and Constraints, Statement of Goals, Objectives, and Policies, and a Five-Year Housing Plan. The Draft Housing Element was submitted to the state Department of Housing and Community Development (HCD) for review.
3. The City maintained a citizen committee to provide input and monitor the early development of the Housing Element. It is not only considered important but vital that the City solicit the ideas and concerns of its citizenry in developing long-range housing strategies to meet the needs of its population.
4. The Housing Element analyzes and presents strategies to meet the housing needs of special groups such as the handicapped, elderly, large families, farm workers, families with female heads of households, and families and persons in need of emergency shelter.
5. Inventories on housing and available (developable) land were coordinated with the preparation of the Land Use and other Elements, as necessary, to assure that an adequate amount of land is available with sufficient densities and in appropriate locations to meet the various housing needs of the City.

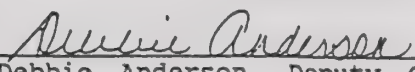
IX. CONSISTENCY FINDING

1. The Land Use, Circulation, Public Services and Facilities, Open Space and Conservation, Public Health and Safety, Noise and Housing Elements of the General Plan are both internally consistent (information presented in different places within each element is consistent), as well as externally consistent, (information presented in different elements is consistent with each other).

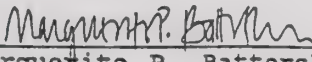
Passed, approved and adopted this 27th day of October, 1992.

ATTEST:


Dennis Johnson, Mayor


Debbie Anderson, Deputy City Clerk

APPROVED AS TO FORM


Marguerite P. Battersby, City Attorney

STATE OF CALIFORNIA)
COUNTY OF SAN BERNARDINO)
CITY OF HIGHLAND)

I, DEBBIE ANDERSON Deputy City Clerk of the City of Highland, California, do hereby certify that Resolution No. 92 - 101 was duly and regularly adopted by the City Council of the City of Highland, California, at a regular meeting thereof held on the 27th day of October, 1992, by the following vote:

AYES: Rissmiller, Scott, Tully-Payne, Wheeler, Mayor Johnson

NOES: None

ABSENT: None

ABSTAIN: None


DEBBIE ANDERSON
DEPUTY CITY CLERK



ACKNOWLEDGEMENTS

CITY COUNCIL

Dennis Johnson, Mayor
Warren Wheeler, Mayor pro tem

Jody Scott, Councilmember

Jim Rissmiller, Councilmember

Laurie Tully-Payne, Councilmember

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INTRODUCTION

The Nature and Purpose of the General Plan

The Nature of the General Plan

The Highland General Plan is a statement by local citizens of what they feel is in the best interest of their community. The general plan functions as a guide to the type of community they desire for the future, and provides the means by which that desired future can be obtained. The Highland General Plan expresses, in the form of text, maps, and illustrations, the organization of physical, economic, and social activities sought by the community in order to create and maintain a functional, healthful, and desirable place in which to live and do business. The Highland General Plan thus serves as a comprehensive strategy for the management of future growth and change.

The Highland General Plan is intended to be a useful guide for local decisionmaking. To provide for logical and orderly development and redevelopment, the General Plan addresses immediate, mid-term, and long-term issues concerning public services, the economic vitality of the community, and environmental constraints. Land use and policy determinations can thus be made within a comprehensive framework which incorporates all public health, safety, and "quality of life" considerations.

The Role of the General Plan

According to State guidelines for the preparation of general plans, the role of the General Plan is to establish a document which will "...act as a 'constitution' for development, the foundation upon which all land use decisions are to be based. It expresses community development goals and embodies public policy relative to the distribution of future land use, both public and private."

As further mandated by the state, the General Plan serves to:

- Identify land use, circulation, environmental, economic, and social goals and policies for the City and its surrounding planning area as they relate to land use and development.
- Provide a framework within which the City's Planning Commission and City Council can make land use decisions.
- Provide citizens the opportunity to participate in the planning and decisionmaking process affecting the City and surrounding planning area.
- Inform citizens, developers, decisionmakers, and other agencies, as appropriate, of the City's basic rules which will guide development within the City and surrounding planning area.

Introduction

State Mandated Elements

State law requires that the General Plan include seven mandatory elements, but allows a certain amount of flexibility in how each local jurisdiction structures these elements. Table I-1, which is found near the end of this introduction, describes the organization of the Highland General Plan and how each of the planning issues contained in this document correspond to the State's seven mandated elements. (Note that many of the planning issues overlap and are addressed by more than one mandated element.)

The land use element designates the general distribution and intensity of uses of the land for housing, business, industry, open space, education, public buildings and grounds, waste disposal facilities, and other categories of public and private uses.

The circulation element is correlated with the land use element and identifies the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities.

The housing element is a comprehensive assessment of current and projected housing needs for all segments of the community and all economic groups. In addition, it embodies policy for providing adequate housing and includes action programs for this purpose.

The conservation element addresses the conservation, development, and use of natural resources including water, forests, soils, rivers, and mineral deposits.

The open-space element details plans and measures for preserving open space for natural resources, the managed production of resources, outdoor recreation, public health and safety, and the identification of agricultural land.

The noise element identifies and appraises noise problems within the community and forms the basis for land use distribution.

The safety element establishes policies and programs to protect the community from risk associated with seismic, geologic, flood, and fire hazards.

In addition to the elements required by State law, the Highland General Plan includes the following optional element:

- *Public Facilities and Services:* This element establishes minimum level of service standards for drainage, water storage and distribution, park and recreation facilities, police and fire services, and sanitary sewer services.

The Comprehensive Nature of the General Plan

To be effective as a decisionmaking tool, the Highland General Plan integrates the following comprehensive view of the community's future physical, social, and economic concern.

- *Establishing a Planning Area Boundary:* In order to ensure that the City's General Plan addresses issues which may affect or be affected by areas outside of the existing city limits, a comprehensive General Plan study area has been established (See Figure I-1). This planning area takes into consideration areas outside the current city limits within the adopted sphere of influence, in recognition of the interrelationships between land use and other issues affecting the City of Highland and surrounding lands.

For example, traffic within the City of Highland is not totally generated by Highland residents and businesses; some of the City's traffic is generated by development outside of the city limits. In order to ensure proper functioning of the City roadway system, it is therefore critical for the City to understand and plan for development occurring in the surrounding area.

- *Maintaining a Regional Context:* It is important that the General Plan establish local policy while keeping in mind that the City of Highland is part of a larger region. Certain issues addressed in the General Plan, such as air quality and hazardous materials, have a local component, but are more readily addressed on a regional or countywide basis. In such cases, the task of the General Plan is to integrate the interests, values, and concerns of the people of Highland with regional and countywide policies. In addition, it is the purpose of the General Plan to provide a forum for the discussion and resolution of issues that cannot be solved by the City alone, but that require cooperative actions by a number of jurisdictions.

Finally, the General Plan recognizes that actions taken by the City of Highland pursuant to this document may have far-reaching effects on lands outside the City, while actions taken by other agencies may have serious implications for the City. Thus, the plan provides for ongoing communications between the City of Highland and other agencies such as the Cities of San Bernardino and Redlands, whose actions can affect and be affected by actions taken by the City.

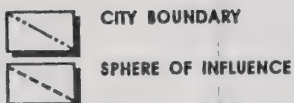
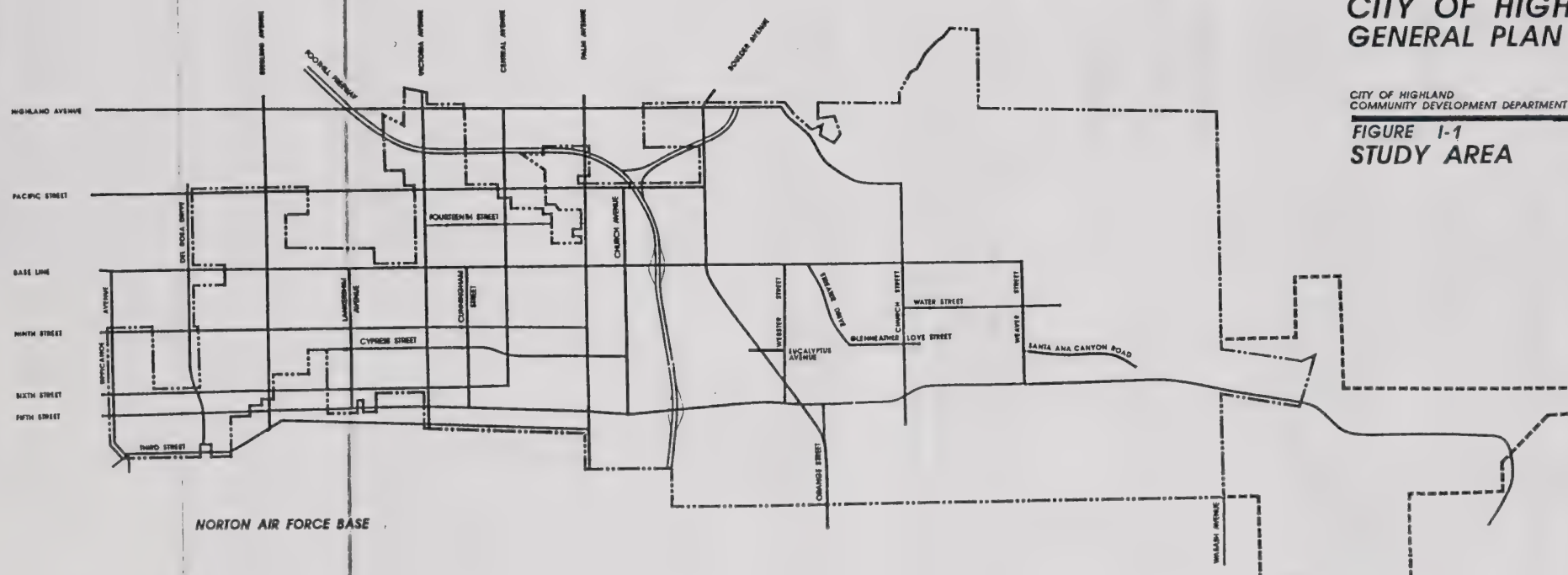
- *Identification of Issues:* The General Plan not only addresses issues that the State mandates be covered, but also includes policies which respond to current community issues which have been identified during the General Plan preparation process. The identification and resolution of the myriad of issues facing the City of Highland was a central focus of the update program.

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

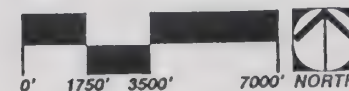
FIGURE 1-1
STUDY AREA



SOURCE: CASTANEDA/ TAKATA ASSOCIATES

PLANNING NETWORK

I-A



Internal Consistency

Not only does the General Plan need to be coordinated with other jurisdictions and consistent with other land use policies and regulations, State law requires that General Plan policies must also be consistent between and among each element. It has also been established by State Law that all text and diagrams are to be internally consistent with both text to which they refer and with other maps and diagrams.

The Highland General Plan as a Long- Term Planning Tool

By definition, a general plan for any community needs to include policies which can be extended into the immediate and long-term future. Most cities rely on 15 to 25 years as the long-term planning horizon for the general plan. The Highland General Plan establishes policies for the ultimate buildout of the study area, thereby creating the framework upon which future general plan reevaluation can be based.

Under State law, the Housing Element, however, represents a short-term program which must be reevaluated every five years. Other elements are routinely reviewed and revised as new information becomes available or as community values or attitudes change. This generally occurs every four to five years.

Introduction

Format, Organization and Structure

General Plan Text

Section I

The General Plan text has been organized into three sections. Section I includes the introduction, which describes the nature and purpose of the general plan, how the plan is organized, and the general plan methodology.

Section II

Section II of this document presents the issues which the City of Highland and its General Plan study area face, as well as the goals, concepts, and strategies which the City will pursue to resolve those issues. Part II is divided into chapters, each addressing a certain type of issue facing the community. These chapters are described below.

Land Use: focuses on the organization of the City's physical environment into a logical, functional, and aesthetic pattern consistent with local social values. This chapter also provides a summary of the manner in which other General Plan issues will affect the arrangement and design of development within the planning area.

Public Services and Facilities: addresses the services and facilities needed to support existing and future residential, commercial, and industrial development within the study area. This chapter focuses on establishing a clear tie between land use and the provision of public services. This chapter also ensures that adequate levels of facilities and services are provided to Highland residents and businesses, and that new development pays its own way and does not impact the services and facilities enjoyed by present residents and businesses.

Circulation: addresses how people and goods are moved through the City. This element also sets standards for roadway levels of service, and relates local transportation needs with regional planning efforts.

Public Health and Safety: consists of an evaluation of natural and man-made hazards faced by Highland residents and businesses. This chapter focuses on determining appropriate levels of protection from various hazards and ensuring that such protection is, in fact, provided.

Open Space and Conservation: focuses on the use and management of natural resources and open space lands within the General Plan study area. This chapter focuses on establishing appropriate levels of resource conservation and preservation in light of the demands which will be placed on these resources by future residents and businesses.

Noise: provides information on current and future noise levels in the City. The Noise Element provides a General Plan basis for the enforcement of noise associated standards and codes, and protects the health and well-being of persons living and working in Highland.

Housing: consists of plans and programs for the provision of housing for all economic segments of the community. This chapter focuses on evaluating issues related to the provision of housing to low, moderate, and upper income households, and those with special needs (elderly, handicapped, large families, and homeless), as well as on establishing specific programs to be undertaken over the next five years to meet the needs of each group.

To assist the reader in understanding and using the General Plan, each of the above chapters has been structured in the following manner:

- *Introduction:* A brief overview of the purpose and contents of the chapter is provided.
- *Planning Issues:* The specific issues which the Highland community faces are assessed to provide a basis for developing the policy portion of the General Plan.
- *Goals, Concepts, and Strategies:* The Goals, Concepts and Strategies represent the heart of the General Plan. It is with these directives that the City will guide new development, maintain the environment and define the future character of the community. These components of the plan are defined below.

Goal

A general, overall and ultimate purpose, aim, or end toward which the City will direct effort.

Concept

Examples, alternatives and options which can be used to understand and to implement General Plan goals and strategies.

Strategies

Actions or activities which, when incorporated with the described general plan concepts, describe how each goal is to be accomplished.

Implementation Matrix: As part of each chapter, a matrix summarizing the timing, funding, and responsibility for each of the General Plan's strategies has been developed to assist decisionmakers. This quick reference summary establishes when, how, and by whom each strategy will be undertaken and how the goals in the plan will be accomplished.

Section III

Section III of the General Plan includes the Environmental Impact Report, which documents the environmental effects of the ultimate implementation of the General Plan.

Introduction

General Plan Maps and Diagrams

Land Use Map

The Land Use Map depicts land use districts which, along with the General Plan text, contain the types and intensities of uses, densities, standards, and in some cases the conditions under which the uses are allowed. The Map also identifies unique areas which may include special standards, such as Planned Development areas.

Circulation Map

The Circulation Map represents the planned roadway system required to support buildout of the land use map. The basic function of the routes represented on the Circulation Map is to indicate transportation corridors, both existing and proposed, as they relate to each other and to planned land use districts. They also serve as a guide to required dedication and improvement of rights-of-way, either in advance of need or as development occurs.

A detailed description of each roadway cross section is included in the Circulation Element of the General Plan.

Highland Bike Trails System

The Highland Bike Trails System designates safe routes for bicycle travel in the City through a hierarchy of on-and off-street trails, lanes and routes. The bike trails system also provides connections to other alternative modes of transportation.

Master Plan of Trails

Closely related to the Circulation Plan, the Master Plan of Trails describes the location and development guidelines for the ultimate development of a public jogging, hiking and equestrian trail system within the General Plan study area.

Guide to the General Plan Process

Program Methodology

The following section describes the methodology used in the Highland General Plan Program. It is intended that the information presented here will give the reader a better understanding of the process by which the Highland General Plan was developed, and how it will be implemented in the future.

A flow chart which summarizes the Highland General Plan Program has been included as Figure I-2.

General Plan Approach

In response to the City's need for rapid completion of the General Plan, following incorporation and limited financial resources, a "two phase" general plan program was developed. This program involved investigating the City's most troubling development issues in a phased program and adopting a legally adequate Interim General Plan for the community. This interim plan was adopted as highly functional document meeting all applicable legal requirements, including the 30-month time limit placed on newly incorporated cities by the State to complete their general plan.

The second phase of the General Plan program was started using the Interim General Plan as the general policy direction for the City. It was the intent of the Phase 2 General Plan to incorporate Highland's "vision" for the future into the general plan. In addition to research efforts conducted as part of the Phase 1 program, the City worked with a Citizen Advisory Committee to conduct an in-depth analysis of outstanding community issues. The Citizen Advisory Committee provided a forum for the systematic evaluation of community attitudes, and also to scrutinize and revise the Interim General Plan in response to the enhanced findings of the Phase 2 research efforts.

The following text describes the methodology for the overall general plan program.

General Plan Philosophy

As an initial task in the development of a general plan, it is important to establish a general philosophy to guide the effort. The following philosophy was used to guide development of the Highland General Plan.

- The general plan must **ANTICIPATE**, rather than react, foreseeing the environment of the future and the desired condition of the community within that environment.
- The general plan must be **PEOPLE-ORIENTED**, reflective of the needs and desires of the local citizenry and business community. The General Plan must define the quality of life issues facing the community, and provide the means by which the future can be managed and quality of life can be protected.

Introduction

- The general plan must be **PRAGMATIC**, rather than wishful, providing a means of making events and community structure happen, instead of merely reacting to changing conditions which unfold on the city scene.
- The general plan must be **ACTION-ORIENTED** and capable of being translated into specific actions and projects in light of a realistic appraisal of current opportunities and constraints.
- The general plan must be **FLEXIBLE**, able to accommodate unique situations, evaluate results as plans are refined or implemented, and to adjust as required to meet unforeseen changes in circumstances.

Community Participation Program

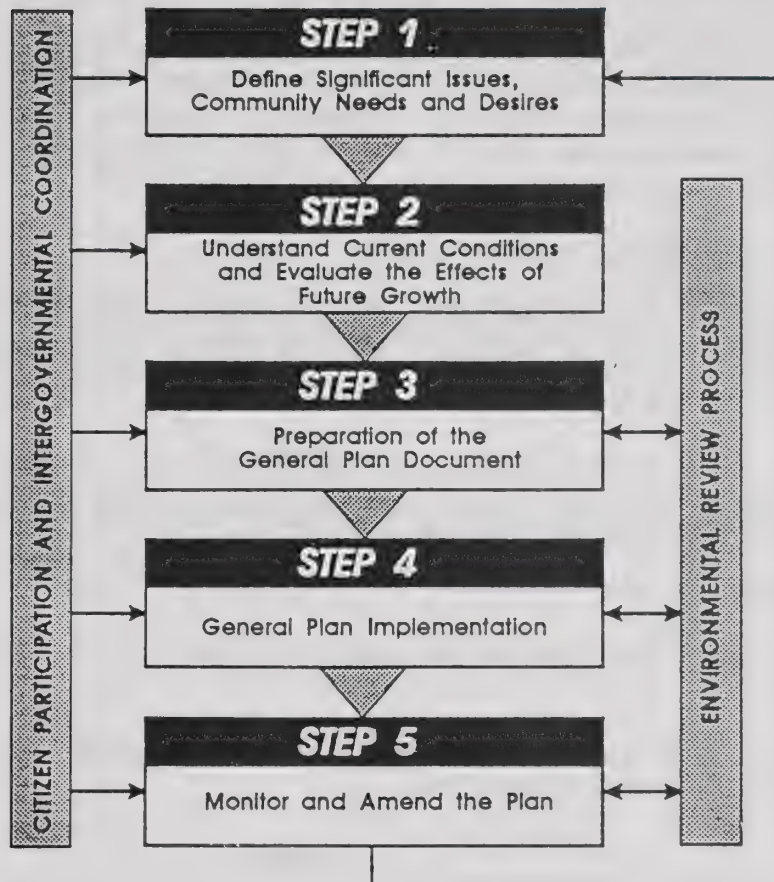
As an ongoing component of the General Plan Program, community participation represents the most important effort of the process. It is through community participation that a general plan is specifically tailored to the needs and desires of the community.

Recognizing the importance of organized citizen input into the planning process, the Highland General Plan Program included the establishment of a Citizen Advisory Committee (CAC), representing a diversity of interests within the Highland community.

Coordination with several other City Committees involved the Community Trails Committee, and the Historic Preservation Committee.

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Figure I-2
Highland General Plan Process



Introduction

Define Significant Issues, Community Needs and Desires

Issues represent the unresolved concerns of the community which are identified in the General Plan and dealt with by the Plan's goals, concepts, and strategies. Methods used to identify and understand community issues included Community Participation Programs, Community Leader Interviews, Community Advisory Groups, and coordination with other jurisdictions.

Understand Current Conditions and Evaluate the Effects of Future Growth

Conducted in both Phase 1 and Phase 2 of the program, this step of the General Plan Program established the baseline of information from which the ultimate development of the general plan policy was based. This research provided an understanding of the existing natural and manmade conditions within the community, their effect on the City's options for the future, and the natural and logical extent of the ultimate city limits.

Preparation of the General Plan Document

Once the General Plan issues and existing setting have been identified, analyzed and documented, the goals and strategies can be developed. During the Highland General Plan Program, the following integrated sub-tasks were undertaken to complete the General Plan Document:

Phase I

- Identification and documentation of the community's goals and objectives.
- An analysis of land use alternatives and the development of a preferred Land Use Map.
- Development of strategies, and implementation programs necessary to attain the stated community goals.
- Preparation of an Environmental Impact Report (EIR) to document the potential environmental impacts of the Phase I General Plan.

Phase II

- Review and revision of the interim community goals and objectives to establish a broad vision for the future.
- An analysis of land use alternatives and the development of a refined Land Use Map.
- Development of new concepts, strategies, and implementation programs to supplement interim goals and objectives.
- EIR preparation occurred throughout the program, and was completed after the Phase II General Plan document had been finalized. The EIR's importance in the program is to provide decisionmakers and the public an opportunity to assess the potential impacts that proposed general plan policies may have on the environment prior to the adoption of the General Plan.

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General Plan Implementation

Adoption of the General Plan is not an end, but is a critical step in an ongoing process of plan preparation, adoption, implementation, monitoring, and revision. Primary among implementation tools is a State requirement that zoning and subdivision actions, as well as capital improvement planning, be consistent with the adopted General Plan.

The Highland General Plan provides the first step in this process by integrating an *Implementation Matrix* at the end of each chapter. This quick strategy reference guide helps those interpreting the plan to have ready access to a summary of the responsibility, timing and funding information for each strategy.

Monitor and Revise the General Plan

It is important that constant monitoring of General Plan policies be undertaken to establish a clear basis for future updates. State law requires that an annual report be provided to each community's planning agency outlining the status of general plan implementation. In addition, the California Environmental Quality Act requires that local agencies monitor the implementation of mitigation measures included in EIRs. Because the strategies included in the Highland General Plan represent environmental mitigation measures, their implementation must be monitored.

By law, the General Plan may only be amended a maximum of four times a year (although several changes may be grouped into a single amendment). In order to ensure a compatible and consistent General Plan document, any proposed change in the Land Use Maps must be consistent with the criteria and conditions of the text.

Introduction

Table I-1
Comparison of Highland General Plan Issues to
Required General Plan Elements

PLANNING ISSUES	Land Use	Circulation	Housing	Conservation	Open Space	Noise	Safety
Community Development							
Land Use	•				•		
Historic Resources							
Circulation							
Transportation		•					
Public Services & Facilities							
School Facilities	•			•			
Park and Recreation Facilities	•			•	•		
Water Facilities				•	•		
Sewer Facilities				•			
Law Enforcement Facilities							•
Fire Facilities							•
General City Facilities	•			•	•		
Library Facilities	•			•			
Solid Waste Facilities and Equipment	•			•			
Other Facilities	•			•			•
Open Space and Conservation							
Open Space	•			•	•		
Soil Conservation	•			•	•		
Agricultural Lands	•			•	•		
Water Resources				•			
Biological Resources				•	•		
Mineral Resources		•		•			
Cultural Heritage				•			
Aesthetic Resources				•			

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Table I-1
Comparison of Highland General Plan Issues to
Required General Plan Elements

PLANNING ISSUES	Land Use	Circulation	Housing	Conservation	Open Space	Noise	Safety
Public Health and Safety							
Geology and Seismicity							•
Crime and Prevention							•
Noise						•	
Fire							•
Hazardous Materials							•
Emergency Services and Facilities							•
Airport Land Use Compatibility	•					•	•
Air Quality				•			
Noise						•	
Housing							
Housing	•		•				

Introduction

Table I-2
Index to Location of State Mandated General Plan Issues
Within the Highland General Plan

PLANNING ISSUES	Community Development	Circulation	Public Services and Facilities	Open Space and Conservation	Public Health and Safety	Noise	Housing
Land Use							
Distribution of Housing, Business, Industry	•						
Distribution of Open Space	•		•	•			
Distribution of Mineral Resources				•			
Distribution of Recreation Facilities	•		•				
Location of Educational Facilities	•		•				
Location of Public Buildings	•		•				
Location of Future Solid and Liquid Waste Facilities			•		•		
Identification of Areas Subject to Flooding			•		•		
Circulation							
Major Thoroughfares		•					
Transportation Routes		•					
Terminals		•					
Other Local Public Utilities and Facilities	•	•	•				
Housing							
Preservation of Housing							
Maintenance of Housing							•
Improvement and Conservation of Housing						•	
Development of Housing							
Adequate Sites for Housing	•						•
Adequate Provision of Housing for Projected Needs							•

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Table I-2
Index to Location of State Mandated General Plan Issues
Within the Highland General Plan

PLANNING ISSUES	Community Development	Circulation	Public Services and Facilities	Open Space and Conservation	Public Health and Safety	Noise	Housing
Promotion of Equal Housing Opportunities							•
Conservation							
Water			•	•			
Soils				•			
Rivers and Other Waters	•			•	•		
Wildlife				•			
Minerals				•	•		
Other Natural Resources				•			
Water Program				•			
Reclamation of Land and Waters				•			
Prevention of Pollution of Streams and Other Waters				•	•		
Regulation of Land in Stream Channels	•				•		
Protection of Watersheds				•			
Flood Control	•		•		•		
Open Space							
Open Space for preservation of Natural Resources	•			•			
Open Space for Managed Protection of Resources	•			•			
Open Space for Outdoor Recreation	•		•				
Open Space for Public Health and Safety	•			•	•		
Trail-Oriented Recreational Uses		•		•			

Introduction

Table I-2
Index to Location of State Mandated General Plan Issues
Within the Highland General Plan

PLANNING ISSUES	Community Development	Circulation	Public Services and Facilities	Open Space and Conservation	Public Health and Safety	Noise	Housing
Noise							
Major Noise Sources						•	
Existing and Projected Noise Contours						•	
Determination of Noise Problems						•	
Noise Attenuation						•	
Safety							
Seismic Hazards					•		
Slope Instability and Mudslides				•	•		
Subsidence and Geologic Hazards				•	•		
Flooding					•		
Wildland and Urban Fires			•		•		
Evacuation Routes					•		
Water Supply Requirements			•				
Emergency Road Widths			•		•		
Clearance Around Structures					•		

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GENERAL PLAN

LAND USE

Introduction

California law requires that each city and county prepare and adopt a comprehensive, long-term general plan for its physical development. Government Code Section 65302(a) requires that local general plans include a Land Use Element as part of the required general plan. This requirement is intended to ensure that communities achieve and maintain a logical land use pattern, as well as standards for population density and development intensity which are consistent with community goals and objectives. Thus, the land use element has the broadest scope of the general plan elements required by State law.

Purpose and Function

The Land Use Element consists of the organization of the City's physical environment into a logical, functional, and aesthetic pattern consistent with local social values. While this Element focuses on land use, it is also a summary of the manner in which other General Plan issues will affect the arrangement and design of development within the City of Highland's planning area.

In order to accomplish this broad scope, the Highland General Plan study area is composed not only of the acreage within the existing city limits, but includes areas within the City's sphere of influence and beyond (Figure II-A-2). State planning law allows municipalities to plan for development outside local jurisdictional boundaries. Therefore, General Plan policies for land uses which may have a potential to be included within the City in the future, and areas for purposes of physical coordination, such as regional roadways, aircraft hazards, regional drainage, utilities, etc., will need to be taken into consideration when future land use decisions are made.

In addition to addressing the existing and future land use issues within the City of Highland, the Land Use Element includes discussion of Highland's historical heritage. Even though the City has only recently incorporated, a portion of the physical and social setting for the community is well rooted in the past. The degree to which the decisions of the past impact the current and future land use pattern of the City is an important policy issue which this element is intended to address.

The Land Use Element has been organized to address the following issues:

- Community Structure;
- Community Character and Design;
- Regional Cooperation and Coordination; and
- City Boundaries.

Land Use

Goals Summary

Goal 1

Maintain a mix of land uses which enhance the quality of life of Highland residents.

Goal 2

Management of land uses with respect to location, density, and intensity, in order to maintain consistency with the capabilities of the City and special districts to provide essential services, and to achieve sustainable use of available resources.

Goal 3

Achievement of a regional perspective in land use decisions affecting the residents of Highland.

Goal 4

Achieve a fiscally solvent, financially stable community.

Goal 5

Maintain recognition both within Highland and the region as being a community with a well planned and aesthetically pleasing physical environment.

Goal 6

Protect and enhance architectural and historical resources located within the City of Highland which evoke distinctive stages of the City's history so that such resources might be part of the consciousness of present and future generations. This consciousness will build pride in Highland's unique qualities by fostering citizen efforts to preserve and enhance historical resources.

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Existing Setting

Community Development

The City of Highland is located in the eastern portion of the San Bernardino Valley, east of the City of San Bernardino and north of the City of Redlands (see Figure II-A-1). As shown in Figure II-A-2, the City of Highland's western boundaries are very irregular, as a result of previous annexations into the City of San Bernardino, prior to Highland's incorporation. Growing sentiment in response to the easterly expansion of the City of San Bernardino, prompted the residents within the Highland area to preserve the area's identity through incorporation. As a result of this growing desire on the part of area residents to maintain a distinct municipal identity, Highland incorporated in November 1987 as San Bernardino County's eighteenth City.

The East San Bernardino Valley Regional Statistical Area, of which Highland is a part, is one of the fastest growing regions in the nation. The Southern California Association of Governments (SCAG) has projected in their Regional Growth Management Plan that the population of the East Valley will grow by approximately 395,400 persons between 1984 and 2010, representing a 104 percent increase.¹ Housing development is also expected to grow by approximately 122 percent in the East Valley area during the same period. Employment levels in the East Valley are projected to increase from 135,535 jobs in 1984 to approximately 270,300 jobs in 2010. The 134,800 increase in area employment represents a 99 percent increase.

Although Highland is a new city, the community of Highland has a long history. The earliest attempts to establish an agricultural settlement in the Highland area occurred in 1858, when the Cram and Van families constructed a ditch to bring water from the Santa Ana River to their lands in East Highlands; the ditch extended as far as City Creek, east of the present Highland village townsite. By the early 1880s, agricultural development was increasing, most notably the planting of citrus orchards. The construction of the North Fork Ditch began in 1881, bringing water from the upper part of the Cram and Van Ditch west along the mountain front, crossing City Creek, and terminating near the present intersection of Palm and Highland Avenues. Evidence of the early rock-lined ditches can still be seen along the west side of Church Avenue below Pacific Street, and on the west side of Palm Avenue, north of the former Santa Fe rail right-of-way.

Prompted by the construction of a rail line through the area, the original Highland townsite was surveyed in 1891, and was recorded in 1893. It consisted of the area south of Pacific Street between Palm Avenue and Church Avenue, including the south side of Main Street. Additional development occurred on unplatted lands on Pacific Street west of Palm Avenue. Subsequent to the construction of the rail line, packing houses aligned themselves with the rail line, creating a diagonal swath ("packing house row") through the center of the town. In the 1890s, a narrow gauge railroad connected Highland to San Bernardino and Redlands. This line was subsequently widened and upgraded for electric rail service. In 1911, the line was acquired by the Pacific Electric Railway, which provided passenger service until the mid-1930s. Many buildings remain from this significant period of the townsite (through 1938).

¹ Southern California Association of Governments, Regional Growth Management Plan, 1988.

Land Use

By 1903, the town of Highland had a population of over 1,000, expanding into previously undeveloped acreage south and west of the intersection of Palm Avenue and Pacific Street, recorded as "Cole's Addition" in 1904. The local economy was firmly rooted in the citrus industry, and was thus susceptible to the fluctuations of that industry. The 1920s were years of prosperity, with new packing houses being constructed, and the town expanding to the north.

By the mid-1930s, a number of changes began to signal the end of Highland as the closely-knit citrus community it had been. Although the strength of the citrus industry somewhat buffered the effects of the depression, the increasing importance of the private automobile yielded a noticeable shift in community focus from internal to external concerns.¹ The increased mobility of residents, the loss of Pacific Electric Railway, the sale of the local bank to a Statewide organization, and the beginning of the decline of the citrus industry, coupled with natural disasters, including a disastrous freeze in 1937, led to the economic stagnation of the Highland area.

Additional information on Highland's history is presented in Figure II-A-7.

Suburbanization of the Highland area began as early as 1943 with the establishment of the San Bernardino Army Air Depot (now Norton Air Force Base). Citrus groves were removed and replaced with housing. As the suburbanization process accelerated in the postwar population explosion period, area packing houses lost their support base, and were largely converted to various industrial uses. This early suburbanization moved east from the San Bernardino area, stopping at City Creek. Suburban development east of City Creek did not occur until much later, primarily spurred by the development of East Highlands Ranch in the 1980s.

In addition to the contemporary East Highlands Ranch Planned Development and modern upper end housing, one can also find significantly deteriorated housing, impacted by activities from Norton Air Force Base. Within the original Highland townsite, there remain excellent examples of the high end housing of Highland's heyday, as well as both architecturally significant and deteriorated commercial buildings attesting to the economic changes which brought about the demise of the townsite as the center of Highland's social structure.

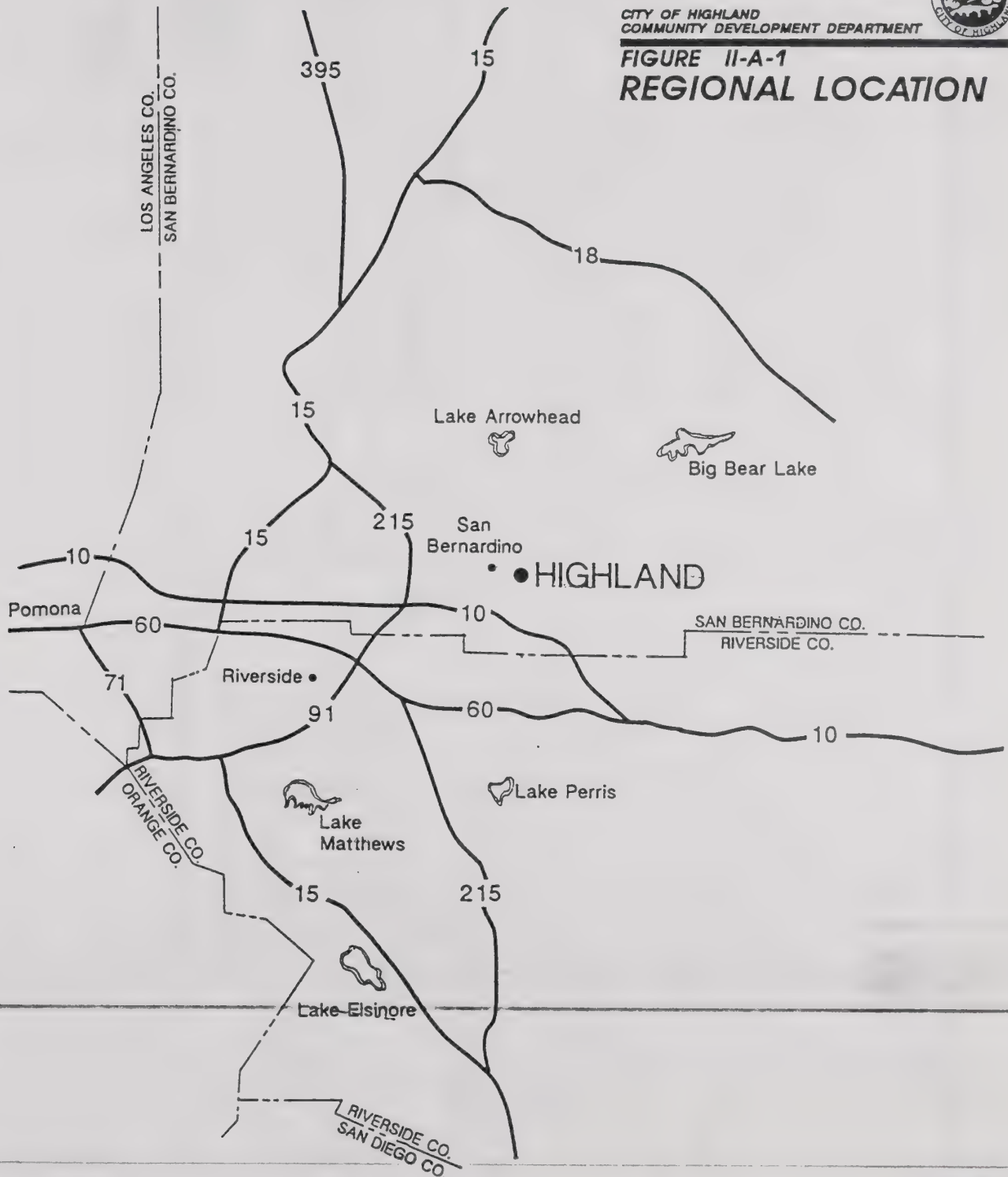
¹ Gallup, Aaron A., Historical Architectural Survey Report for the Revision of the Highland Historic District in the City of Highland, San Bernardino County, September 1988.

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-A-1
REGIONAL LOCATION

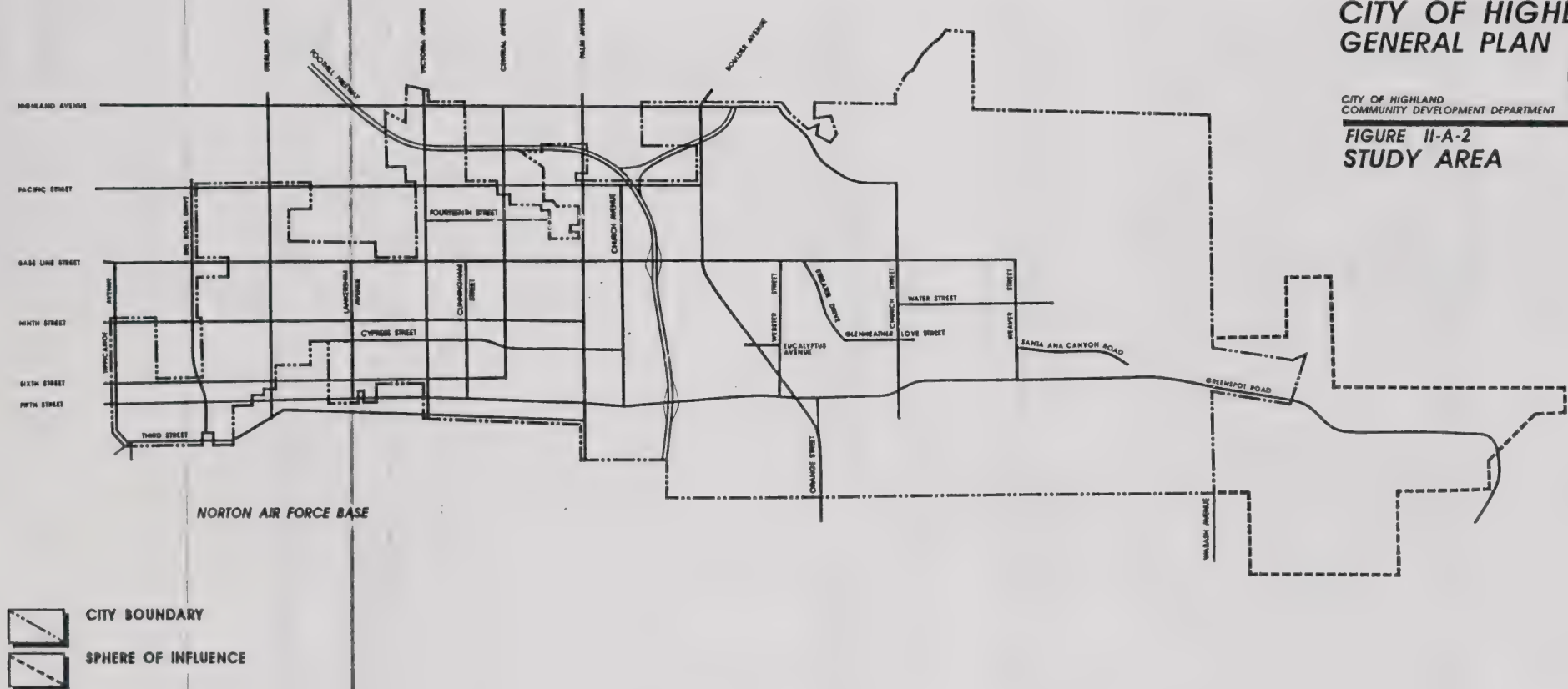


SOURCE: CASTANEDA/ TAKATA ASSOCIATES

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FIGURE II-A-2
STUDY AREA



PLANNING NETWORK

II-A-6



The rapid growth that Highland has experienced since its incorporation in 1987 is expected to continue. A build-out population of 61,577 is projected for the City of Highland and its sphere of influence; land use buildout is shown in Table II-A-1. Because total buildout to the maximum densities permitted by a general plan is rarely achieved, and because the land use calculations are based on gross acreage which includes streets, 70 percent of Highland's theoretical maximum buildout capacity was believed to be a realistic estimate of the buildout of the Highland General Plan. The buildout population was estimated by multiplying the projected number of dwelling units identified in Table II-A-1 by average household size (3.04). The buildout of the East Highlands Ranch Planned Development was compiled using the actual and planned development proposal approvals. Residential buildout of the Village Commercial and Residential categories was based on an assumed maximum of 20 acres of residential land being developed at the same density as the Low Density Residential category. Providing adequate infrastructure and services to accommodate this substantial population increase will be one of the major challenges facing Highland in the future.

It is important that the City's General Plan establish clear cut guidelines to provide a balanced and compatible land use mix, to protect the natural environment, and to establish a positive community image. The goals and objectives expressed in the Land Use Element reflect the City of Highland's commitment to maintaining a quality living environment while fostering economic growth.

Table II-A-1
Highland General Plan Land Use Summary

Land Use Category	Acres	Dwelling Units
Agricultural/Equestrian (0-2.0 du/ac)	1,063	1,917
Low Density (2.1-6.0 du/ac)	3,152	12,602
Medium Density (6.1-12.0 du/ac)	212	1,890
High Density (12.1-18.0 du/ac)	25	325
Planned Development	1,916	3,558
General Commercial	147	
Neighborhood Commercial	20	
Base Line Commercial	170	
Planned Commercial	168	
Village Residential/Commercial	29	96
Office Professional	12	
Business Park	203	
Industrial	38	
Public/Institutional	209	
Civic Center	10	
Parks	39	
Open Space	2,175	
City Total	9,588	20,388

Community Structure

The existing land use pattern within the City of Highland is shown in Figure II-A-3. According to the 1990 Census, the present City of Highland is predominantly a residential community with a population of approximately 34,439 persons. The average household size is 3.04 persons. While there are scattered vacant lots in the western portion of Highland, the majority of vacant land is located in the eastern portion of the City. There is also a considerable amount of vacant acreage within Highland's sphere of influence, which is located east of the present city limits.¹

Little commercial development has occurred within the City of Highland. What commercial parcels do exist along Base Line and other commercial corridors are often underutilized. The greatest amount of vacant land with commercial potential exists in the central portion of the City along and near the Foothill Freeway corridor. Although vacant commercial land is limited in the older, developed portions of the community, there exists a significant potential for intensifying commercial use if a program of lot consolidation can be successfully implemented and the infill of surrounding neighborhoods provides the needed market base.

The majority of existing industrial activity within Highland is concentrated along Fifth Street. Sand and gravel operations are located south of Fifth Street in the Santa Ana Riverbed. The potential for future industrial development exists adjacent to Norton Air Force Base and in the southeast portion of Highland along Fifth Street and at the intersection of Palm Avenue and Fifth Street.

Open areas within the City include the foothills along the City's northeastern margin, agricultural lands in the east, and the floodplains of the Santa Ana River and City Creek. Areas subject to flooding are shown on the environmental constraints map of the Public Services and Facilities Element.

Approval of the master-planned community of East Highlands Ranch initiated a trend toward upscale residential development, which has continued and expanded with other development that is occurring in the eastern portion of the City, generally east of Palm Avenue. As various phases of the plan are implemented, Highland will develop the image of a residential community desirable for its quality housing in a semi-rural atmosphere and proximity to major employment nodes. Because the newer, upscale development is focused in one portion of the City, Highland has been commonly thought of as being two communities: a newer upscale suburban community on the east side, and an older moderate- to middle-income community on the west side.

The notion of Highland as two communities is reinforced by a physical separation through the center of the City. City Creek runs generally in a north-south direction through Highland, defining its western and eastern halves. This physical separation has been reinforced by the Boulder Avenue corridor. In addition, the Foothill Freeway will run along this same general alignment, further strengthening the physical separation between east and west.

¹ Other than in the area east of the present City limits along Greenspot Road, the Highland City limits are contiguous with the sphere of influence boundaries.

To describe Highland's existing community structure, the City can be broken down into several urban design elements using the components of a system first developed by urban planner Kevin Lynch. These elements, which include districts, features, gateways, paths, and edges, give a sense of structure to the community and set about a descriptive context from which future land use decisions can be made (see Figure II-A-4). Working from this description of the existing structure, it will be possible to develop the ultimate community structure and identity the City desires to achieve.

Community Districts

A "Community District" is defined as a portion of the General Plan study area which can be distinguished by its unique characteristics and function. A District can be distinguished from other areas by its physical form, function, or activity.

Within the Highland General Plan study area, four distinct Community Districts can be identified. These Districts include the West Highland Community District, East Highland Transitional Community District, East Highland Community District, and the Greenspot Sphere Community District.

West Highland Community District

The older, single-family residential neighborhoods in the West Highland Community District portray, to a great degree, an image of a small town. Although the post-war subdivisions of the west side of Highland often do not have the curbs, gutters, and sidewalks found in more contemporary subdivisions, the result is a small-town character which is reminiscent of communities found in California's Central Valley. In general, the West Highland Community District is located west of the Foothill Freeway (Figure II-A-4). Portions of this area exhibit signs of deterioration in the form of substandard structures, untended vacant lots, and the storage of inoperable vehicles on residential property. Portions of Ninth Street, currently zoned for commercial use, are well established as residential areas. This District also contains a majority of the existing commercial land uses within the City along the Base Line commercial corridor.

East Highland Transitional District

The development of the East Highlands Ranch and the Foothill Freeway has created an area which contains a wide variety of existing land uses. This area is characterized by land uses which are either in a state of transition from older large-lot rural parcels to urban uses, or represent substantial existing uses which are uncharacteristic with those which are found in the East Highland or West Highland Community Districts. This District incorporates three major transportation arteries within its structure. The new Foothill Freeway, Boulder Avenue, and the Base Line Corridor all run through the area. Physical separation from other Districts is caused by the new 30 Freeway and the bluff face near the edge of the East Highlands Ranch master plan. City Creek can also be considered a major feature of the area, since the drainage channel runs diagonally through the district. In addition, the features which make this area unique have served to essentially isolate the local land use pattern into four smaller subareas (Figure II-A-4). The existing land use pattern in each of these subareas can be described as follows:

Land Use

- *Area 1:* Bounded by the Foothill Freeway to the west and north, City Creek to the east, and the intersection of the freeway and creek to the south, the predominant land use character in this subarea is smaller lot, single-family residential development, although some amount of agricultural land does exist. The area is bisected by two major roadways (Base Line and Boulder Avenue) which further divide the area into three distinct neighborhoods. The commercial needs of these neighborhoods are served by a commercial center at the corner of Base Line and Boulder Avenue.
- *Area 2:* This area lies between East Highlands Ranch at Church Street to the east and the City Creek to the west. The Base Line Corridor and Highland city limits make up the southern and northern boundaries, respectively. The character of existing development is determined largely by topography and ranges from large-lot rural equestrian residential, to standard-lot residential, to agriculture and residential agricultural uses.
- *Areas 3 and 4:* The area bounded by Base Line on the north, the Santa Ana River on the south, the Foothill Freeway to the west, and Church Street on the east is made up of a mixture of uses ranging from single-family residential to industrial. The area has a preponderance of underdeveloped land and vacant parcels. The Foothill Freeway, Fifth Street/Greenspot Road, and Boulder Avenue represent major local and regional arteries both in this area, and in the City.

East Highland Community District

The primary development within the East Highland Community District is the East Highlands Ranch development, a contemporary suburban planned community. This project has created a modern, upscale image for Highland's east end, which is being enhanced by individual residential move-up projects, also in the east end. The District is located east of the bluff face, just east of City Creek (Figure II-A-4), and is separated from other Districts by two distinct topographic features: lowlands along the creek, and a bench area upon which East Highlands Ranch has been developed. Hillside areas to the northeast also provide a dramatic setting to these new residential developments.

The East Highland Community District has experienced considerable residential growth in recent years, predominantly due to the development of the master-planned community of East Highlands Ranch. Over a 10-year period, approximately 763 acres are planned for residential, recreational, and commercial development within this project. Of this acreage, 602 acres are planned for residential development, 113 acres are reserved for recreational facilities, and 48 acres are reserved for commercial and office development. Nearly 2,760 dwelling units will be constructed, providing new upscale housing that will be needed in the City of Highland to both meet the area housing need and maintain a positive residential image. The development of East Highlands Ranch will also include business park development, providing needed jobs to the Highland community.

Greenspot Sphere Community District

The Greenspot Sphere Community District adjoins the existing eastern city limits on its western boundary and the Sunrise Ranch on its eastern boundary (Figure II-A-4). The majority of this District is within Highland's sphere of influence and is largely vacant. Existing development consists of agricultural and low-density residential land uses.

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The Santa Ana River runs through the Greenspot Sphere Community District, as it does with several cities along its path, including the Cities of Colton, Anaheim, and Santa Ana. The entire District has historically been considered part of the East Highland Bench, which was dominated by citrus growers under common family ownership. This area has been included in the General Plan study area in accordance with the General Plan Guidelines.

For additional information, see Regional Cooperation and Coordination Section in the Land Use Element.

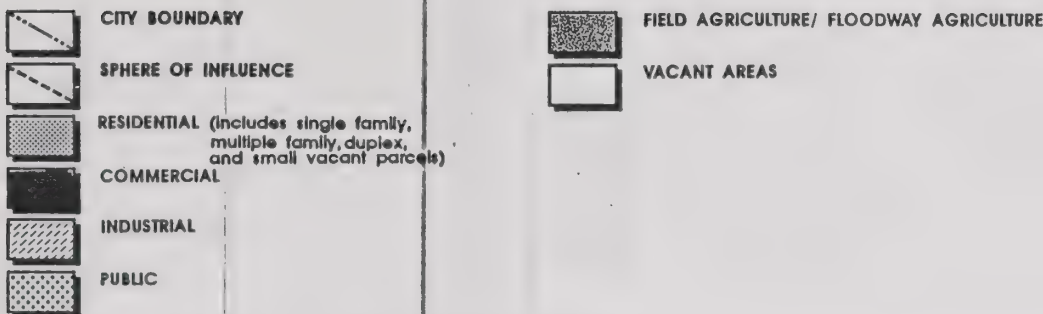
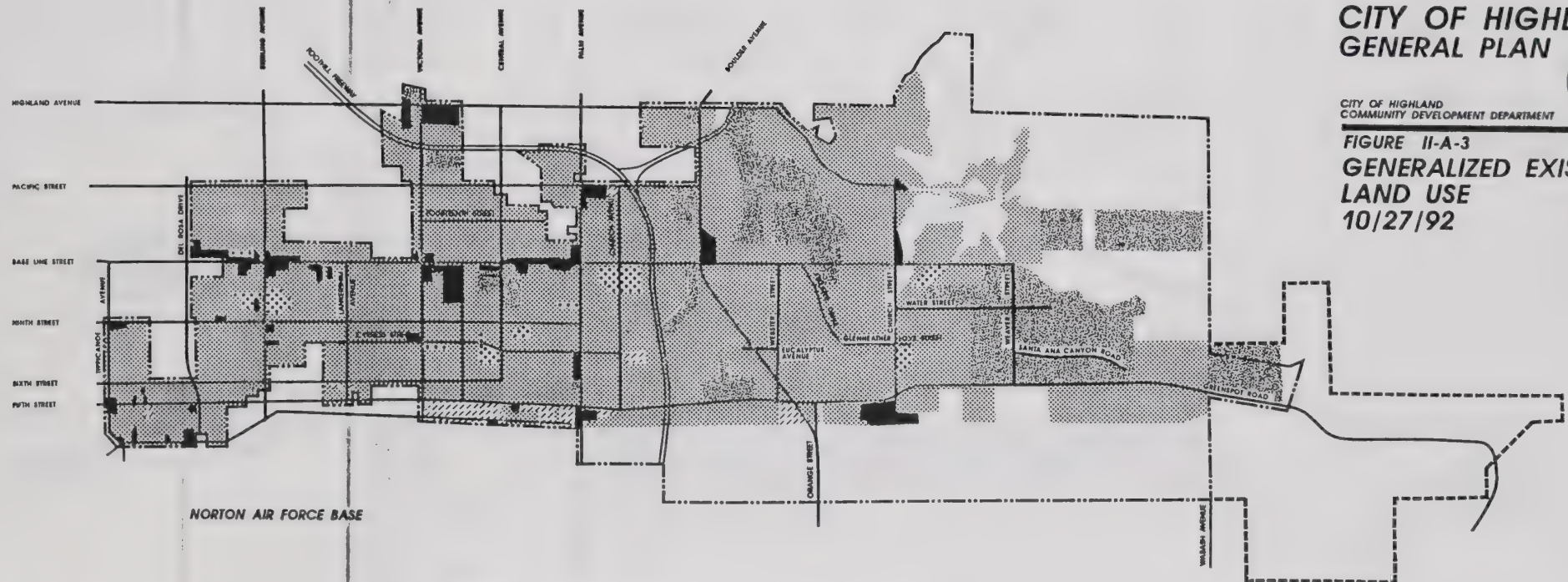
The majority of the area within the Greenspot Sphere Community District is currently designated for either Agriculture/Equestrian or Open Space uses. The vast amount of the remaining vacant land in this area is either hillside area or part of the Santa Ana River flood plain and is undevelopable. Greenspot Road provides the major circulation in the area and provides direct connection to the City of Redlands.

CITY OF HIGHLAND GENERAL PLAN

CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



FIGURE II-A-3
GENERALIZED EXISTING
LAND USE
10/27/92



SOURCE: CASTANEDA/ TAKATA ASSOCIATES

PLANNING NETWORK

II-A-12

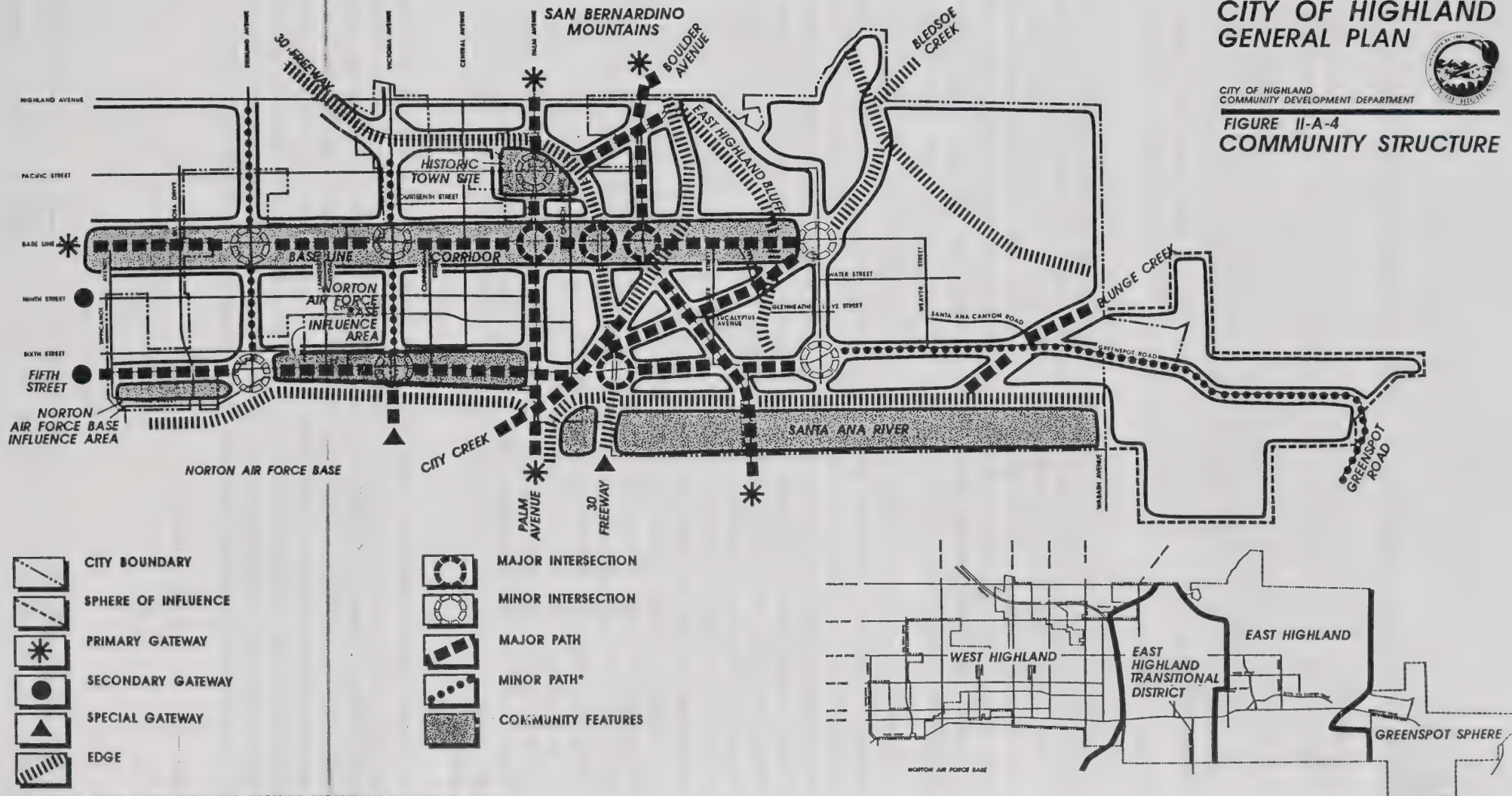


CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-A-4
COMMUNITY STRUCTURE



PLANNING NETWORK

II-A-13



Community Features

The Highland General Plan study area also includes several community components or "features" which serve to further define the structure of the community. Community Features can be subareas of the larger Community Districts, but most often are considered as separate, unique locations within the community.

Historic Townsite

Much of the original Highland townsite remains within the central portion of the City. The Highland Historic District has been determined eligible for listing in the National Register of Historic Places. A 1988 survey of the Highland Historic District identified 101 structures remaining from the early part of the 20th Century. While many of the commercial and industrial structures are in various states of disrepair, they can be rehabilitated. In addition, many fine examples of early 20th Century residential development remain in good condition (for additional information regarding the history of the Highland area, refer to Figure II-A-7).

On November 14, 1978, the California Department of Transportation determined that the original Highland townsite was eligible for listing in the National Register of Historic Places. In June 1987, Caltrans District 8 requested a re-evaluation of the eligibility of the Highland Historic District. The re-evaluation was performed because the proposed freeway project would extend the Foothill Freeway from its termination at Highland and Arden Avenues, to the vicinity of Boulder Avenue, then turn south to join the present Foothill Freeway at Fifth Street. Construction of the new right-of-way may impact cultural preservation of the area. While the project bypasses the Highland Historic District on the north and east, one proposal would have delivered exiting traffic to the vicinity of Church Avenue and Pacific Street at the northeast corner of the old townsite. This alternative would have involved the widening of Pacific Street from Church Avenue to Palm Avenue, significantly changing the character in this area. The re-evaluation upheld the earlier eligibility determination for the Historic District maintaining its integrity. It was determined that some revisions to the freeway alignment would be necessary to preserve the Historic District.

Prior to the incorporation of the City of Highland, the City of San Bernardino annexed several "island" parcels around the current Historic District. This created an irregular shaped boundary in and around the Historic District leaving the City of Highland with an irregular Historic District boundary.

The Historic District boundaries extend from Church Avenue at the east to Orange Street on the west, and from Nona Avenue on the north to Fisher Street at the south. The Historic District occupies approximately 50 acres. A majority of the residences are located west of Palm Avenue as well as one block east of Palm Avenue, on the south side of Main Street. The central commercial retail district extends from Palm Avenue and Main Street to Palm Avenue and the AT & SF railroad tracks. The commercial district is located on the east and west side of Palm Avenue, north of Main Street. Many of the buildings are old packing houses. Of the 134 properties located within the Historic District, 101 are considered historically significant (built between 1880 and the spring of 1938).

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The theme of architecture is represented by the remarkably intact collection of building types and architectural styles which are characteristic of the early 20th century in Southern California; here they remain largely as built and show the social, economic, and spatial relationships prevalent in the community during its years as an important citrus production center. Still surviving are the citrus workers' vernacular cottages throughout the townsite; the more impressive growers' houses on West Main Street; notable (and increasingly rare) examples of industrial buildings serving the citrus industry; and a small number of religious, civic, and commercial buildings reflecting the architectural characteristics appropriate to their periods of construction.

Currently, the original Highland townsite has many buildings that are in poor condition or that have been physically altered without historical preservation techniques. Some buildings are located within the City of San Bernardino, making rehabilitation difficult throughout the entire area in which the Historic District is located.

If the Historic District is to maintain its character and appearance, Palm Avenue's existing right-of-way cannot be expanded to provided for future traffic volumes. Expansion of the right-of-way would require removal of historically significant structures, because many of the buildings have little or no setbacks from the sidewalk or street.

Norton Air Force Base Influenced Area

Norton Air Force Base is located along the south side of the western half of Highland. The historic influence of the base can be seen in numerous multi-family developments and in nearby commercial and industrial uses. Operations at the Base have required an abundant supply of affordable housing for both military and civilian personnel, a portion of which was provided by Highland. In addition, commercial and industrial uses were developed adjacent to the Base in areas subject to noise levels or levels of aircraft operations inconsistent with residential use. At present, Norton Air Force Base is slated for closure as a military operation in March of 1994, although air operations are planned to end as early as September of 1993. A regional effort has been initiated to plan for the conversion of the base to civilian use. At present, it is believed that the base will be used for a civil aviation facility, including an airfield and supporting aircraft services, an office/industrial park, service commercial uses, and public recreation facilities. While aircraft would continue to fly in and out of the base, it is expected that the number of daily operations will decrease, and that the future mix of aircraft at the base will be quieter than the present military fleet.

CITY OF HIGHLAND HISTORIC DISTRICT

FIGURE II-A-5

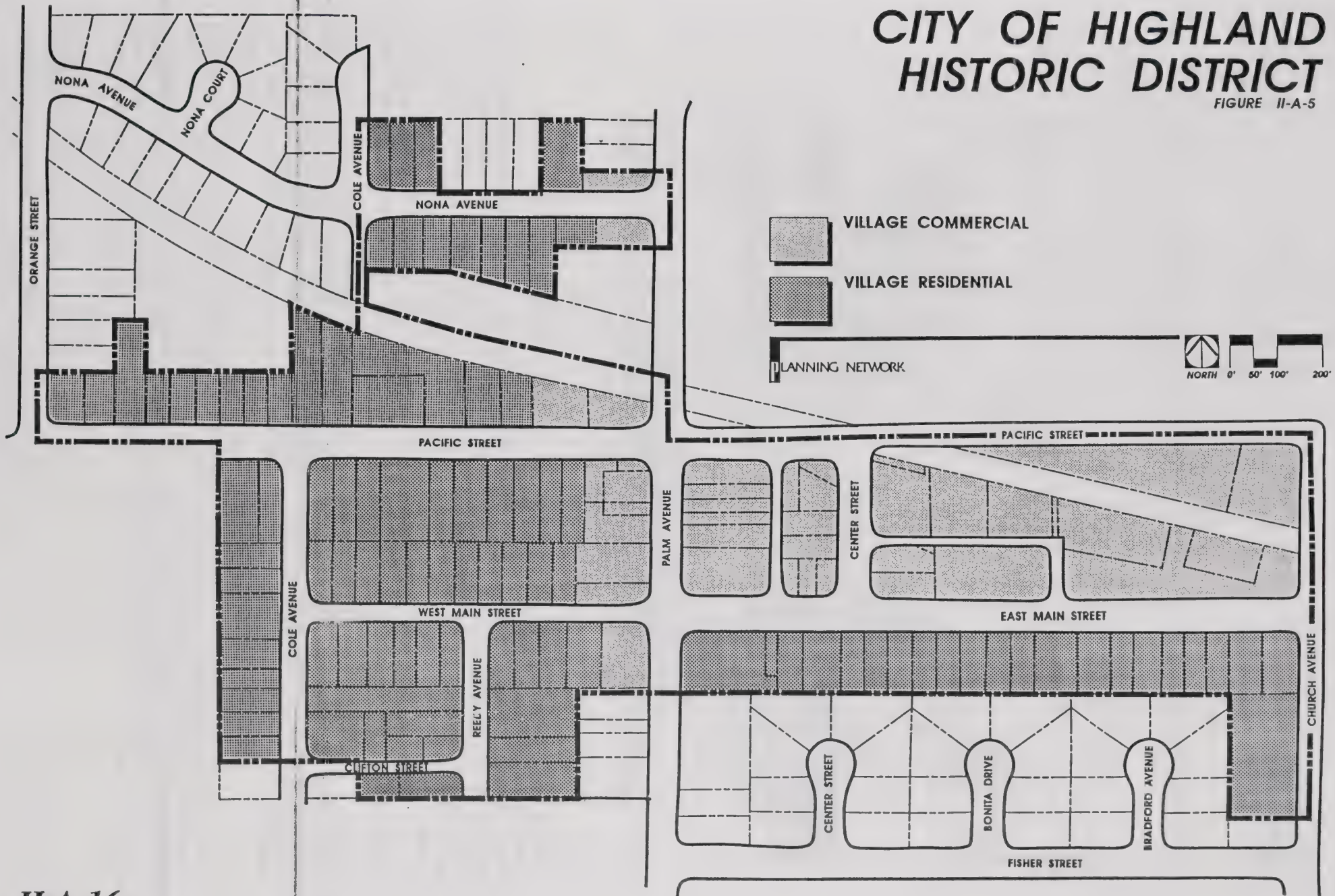


Figure II-A-6
Highland's History



Palm Avenue, looking south from Pacific, c. 1910

The Historic Development of Highland

The historical development of the City of Highland originated in a vast geographic area that extended eastward from Sterling Avenue to the mouth of the Santa Ana River, north of the U.S. Forest Line, and south to the Santa Ana River. Several important communities developed within this area: Cramville (1856); Rabel Springs (1857); Del Rosa (1861); Messina (1873); Harlem Springs (1887); and Patton (1890).

Available water was one of the main factors in the early growth of the area, with farming of deciduous fruits, vegetables, and grains. With the development of the North Fork Water, Bear Valley Water, and Highland Ditch Companies between 1881 and 1888, citrus cultivation was stimulated and widespread acreage was planted.

The first use of the name "Highland" was in 1883, when the name was adopted for the first school west of City Creek in the central area. Before 1883, all students from Del Rosa east attended Cram School, established in 1869 when the Cram School District was separated from the Warm Springs School District in San Bernardino (Cramville).

As early as 1888, the Santa Fe Railroad has first built a line from San Bernardino to Redlands, and then to Mentone. By 1891, negotiations began with the Railroad to complete service from San Bernardino east to Mentone through the northern areas. In 1892, this famous loop of the Kite Track from Los Angeles was finished. The name "Highland" was adopted by the railroad for its depot on Palm and Pacific Avenues. The other two community depots were arbitrarily named West Highland (Del Rosa), and East Highland (Cramville).

With the population increasing and the young orange trees coming into production, packing houses sprang up around the depots. There were probably, over the years, more than 20 packing houses in Highland, 2 in West Highland, and 7 in East Highland.

The completion of the railroad prompted the founding of the Highland townsite at the junction of Palm Avenue, Pacific Street and the Depot. The original townsite was surveyed in 1891 and recorded in 1893. It consisted of the area south of Pacific Street between the Methodist

Land Use

Episcopal Church (then to be constructed) on Pacific Street, and included the south side of Main Street. This area, largely represented by the homes

and buildings that remain today from this original survey, are part of the area proposed for evaluation in the National Register of Historic Places. The principal themes relevant to the significance of the Highland Historic District are those of agriculture and the railroad.

In 1889, Messina changed its name to Highland. During the next several years, accelerated growth occurred, with the construction of a library, a community hall, new businesses, the Methodist Episcopal Church on Pacific Street, and many new residents. In 1903, the San Bernardino Valley Traction Company completed an electric railway line which connected Highland with downtown San Bernardino.

After 1904-1905, Highland had developed into a cohesive townscape; boasting a population of more than 1,000, and expanding into the previously undeveloped acreage south and west of the intersection of Palm Avenue and Pacific Street, south and west of the train depot. A blacksmith shop and two story brick restaurant with upstairs lodgings were located on Center Street, while numerous small residences were being built on (East) Main Street. These were the homes of workers employed in the citrus industry.

As Highland's economy prospered from citrus production and shipping, the town was in need of a financial institution. In April of 1904, the First Bank of Highland opened its doors, and had a prominent role as the town's only financial institution well into the Depression, when it was sold to Bank of America in 1937.

A series of disasters struck Highland in the 1930s, beginning with a major fire in July 1930, which destroyed the Highland Citrus Association facility on Palm Avenue. It was rebuilt quickly, only to be destroyed again by a fire of suspicious origin one year later. A few months later, two more citrus packing houses were totally destroyed by fire: the Highland Orange Association and the Cleghorn and Lenhart facilities on the south side of the Santa Fe tracks east of Center Street. In spite of the damage to packing facilities, citrus production remained high in the early years of the 1930s.

By the mid-1930s, in addition to the depression, Highland was being affected by changes that would significantly alter the course of the City: the popularity of the private automobile forced the Pacific Electric Railway to curtail local passenger service; the acquisition by Bank of America of the locally-owned First Bank of Highland; and a major freeze in 1937, followed by a flood in 1938 which damaged many of the citrus orchards. It was not any single event, but a combination of events, concentrated into a relatively short period of time, which marked a significant change in the community in the mid-1930s.

From 1943, with the establishment of the San Bernardino Army Air Depot (currently known as Norton Air Force Base), replacement of citrus groves with housing occurred with increasing frequency. As the process accelerated with the postwar population explosion, which affected much of the Los Angeles Basin, citrus packing houses throughout the region began to close. Eventually, all of the surrounding groves were removed and packing houses were converted to alternative uses, such as light industry and manufacturing. The Pacific Electric Railway discontinued freight service, and the Santa Fe depot was torn down in the 1950s. The railroad abandoned its line in 1953 and the tracks were taken out in the early 1980s. Eventually, the old central business district on Palm Avenue lost its grocery and drug store, post office, library, and other historic community services in the late 1960s. These were largely replaced by shopping centers on Base Line and Highland Avenue.

The old townsite now forms only a small part of present-day Highland, which voted to incorporate as a city of more than 29,000 population in November of 1987. In spite of the loss of its encircling groves and the citrus economy which once kept its packing houses operating and shaped the daily lives of its citizens, the old citrus town of Highland still retains a remarkable sense of time and place which has been virtually lost from the rapidly-changing Southern California landscape.

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Of the cities which surround the base, the City of Highland makes up approximately two-thirds of the northern base boundary along Third Street (see Figure II-A-4). The City of San Bernardino, of which Norton Air Force Base is a part, extends north of the Base between Sterling and Victoria Avenues. The Air Force Base owns 208 units of residential base housing at the northwest corner of Third Street and Victoria Avenue. According to the Norton Air Force Base Disposal and Reuse Draft Environmental Impact Statement, this housing is slated to remain military-designated housing after the base closes. In addition, the military owns a 30-acre parcel within the City of Highland at the northeast corner of Sixth Street and Central Avenue, which has been used for recreation activities. The City of Highland is currently negotiating for the development of a 10- to 15-acre public park to be developed on this site.

For additional information concerning this property, see the Planned Development Section of the Community Development Element.

Other uses in the Norton Air Force Base Influenced Area include a mixture of residential, commercial, and industrial uses. Underutilized or vacant property is common in and around existing uses, creating an inconsistent land use pattern in the area.

Base Line Corridor

Base Line is the principal east/west corridor through the City, and its primary commercial area. It is bounded by residential, commercial, public, and industrial uses. The corridor suffers from poor visual quality. Commercial lots are shallow, often extending not more than 100 feet back from the street frontage, and are generally narrow; most parcels along Base Line are too small to effectively support a vibrant commercial operation. This has led to the development of small-scale freestanding business establishments that lack landscaping and adequate off-street parking. There are some newer multiple and single-family residential developments among the commercial uses.

In addition, development is further hampered in the area due to the inconsistency of City boundaries. Two areas along Base Line, generally west of Victoria Avenue, fall outside the City of Highland city limits (Figure II-A-4).

Base Line is also the center of community life. Highland City Hall, the post office, and the library are all located on the south side of the Base Line Corridor just west of Palm Avenue. With plans to expand the public uses in this area into a new 10-acre Civic Center, the City has the potential to create the need for other commercial, office, and support uses in the area. Such an increase in activity may be the catalyst needed to develop the "downtown" core which has been lost, in the past, to strip commercial development.

Santa Ana River

East of Norton Air Force Base, the Santa Ana River runs along the south side of the City of Highland (Figure II-A-5). The River's flood plain provides visual open space, and a physical separation from the City of Redlands to the south. The riverbed is also rich with aggregate resources, some of which are currently being mined. The potential for expansion of mineral extraction resources within the riverbed will be a major issue and concern for the future of Highland.

For further discussion on mineral resources, refer to the Open Space and Conservation Element of this General Plan.

In addition to the Community Districts and Community Features described above, several components of Highland's Community Structure can be broken down into specific elements. The elements include concentration of uses, or "nodes," elements which run through the Community, or "paths"; and linear elements which restrict movement through the City, or "edges."

Nodes

The term "node" is used to denote places in the General Plan study area where a concentration of uses or activity is present. Nodes can also be used to describe points of transition, such as gateways into and out of the City. Designated nodes are summarized below and on Figure II-A-4.

- *Primary Gateways:* There are five primary gateways into the City of Highland: Boulder Avenue and Palm Avenue from the north and the south, and Base Line from the west. Boulder Avenue and Palm Avenue provide the strongest sense of entry into the City, since both must cross the Santa River prior to entering the City from the south.
- *Secondary Gateways:* Secondary gateways occur along Ninth Street and Fifth Street from the west, since they provide connection with the adjacent City of San Bernardino.
- *Special Gateways:* Both the Foothill Freeway and Victoria Avenue at the Norton Air Force Base can be considered special gateways, since much of the right-of-way is below grade and drivers receive an impression of suddenly appearing in one portion of the City or another. Currently, exits are being constructed at Fifth Street and Base Line. Although lacking in positive community image, the entrance to the Norton Air Force Base represents a special gateway. As a long-term activity center and community feature, the Base represents a definite transition from military to civilian land uses. This gateway should be an important focus in the future, should plans for the reuse of the Air Base be realized.

Paths

Paths are represented by streets, channels, walkways, or natural features that move through the community. Major paths within the Highland General Plan study area include major transit routes such as the Foothill Freeway, Base Line, Boulder Avenue, Palm Avenue, and Third and Fifth Streets. Other natural features such as the Santa Ana River, City Creek, and other smaller drainage channels can be considered major paths within the area.

Minor paths within the area include pedestrian walkways, trails, and sidewalks, and neighborhood collector roadways.

Edges

Edges are generally linear elements which could restrict physical or visual movement, or represent abrupt transitions in land use or physical features.

The location of edge elements within the Highland General Plan study area are shown in Figure II-A-5, and summarized as follows.

Major Edge Elements:

- San Bernardino Mountains
- City Creek
- East Highland Bluff
- Santa Ana River
- Norton Air Force Base
- Plunge Creek
- Bledsoe Gulch
- Foothill Freeway

Community Character and Design

Community Image

Historically, the City of Highland was recognized as a commercial, industrial community focused around the citrus industry. Since the early 1940s, due partly to the decline of the citrus industry and the conversion of orange groves to housing tracts, the City of Highland has been typified as a suburban residential community. This "bedroom community" image has brought many people to the City seeking housing types ranging from apartments to large-lot custom homes. Highland's picturesque surroundings, due primarily to its location in the foothills of the San Bernardino Mountains; its suburban atmosphere; employment opportunities and services available in surrounding communities; and numerous housing opportunities have made the City a desirable community in which to live.

Land Use

Over time, however, the City has seen the decline of many of the areas which once gave the community charm. Therefore, Highland is also seen as a city in transition from a suburban small-town heritage to a modern community. Unfortunately, the pains of growth and change in the community are not always ideal for the City's image. Transition in some areas has proven to be difficult, and has tarnished the City's community image. Due largely to the age of development, many of the residential areas in the west end of the City are in need of infill developments on underutilized parcels, preservation of the existing well-maintained neighborhoods, or rehabilitation. The City also suffers from the lack of identifiable transitions from one land use to the next. This is especially true in the area north of the Norton Air Force Base, where multi-family residential has been mixed with industrial, commercial development, and vacant parcels.

Since incorporation, however, the City has made substantial efforts to improve the image of the community, including special efforts in areas which show signs of decline. Efforts made to establish a historic district, Ward Street rehabilitation and preservation programs, and the development of new zoning and signage standards, are setting the framework from which a positive community image can be built.

Planned growth and the development of the Foothill Freeway will undoubtedly change the current community character. The new freeway will not only emphasize the separation of the west from the east, but also, the development focus may change from residential development in the eastern portion of the City to commercial development adjacent to the freeway. By defining the specific aspects of the community's character which are worthy of preservation, and identifying the focus of the community for the future, the General Plan can serve to protect the area's character, while permitting desirable forms of growth to occur.

Community Design

The use of Planned Developments to set forth policies and standards has been supported as the primary tool to achieve quality design within the City of Highland. Since the City has been incorporated only a short time, an overall design framework, aside from the traditional design review process from which innovative designs can be derived, has yet to be established.

Regional Cooperation and Coordination

Because of the interdependence of land uses between the various jurisdictions within the area, establishment of a clear policy regarding regional cooperation in managing land use and development is necessary. Such a policy includes instilling a recognition that the land use decisions made by each agency may have far-reaching implications for the others. This is particularly true for development decisions made by the City of San Bernardino to the west, where jurisdictional boundaries are inconsistent, and the County of San Bernardino within Highland's sphere of influence, where a development pattern has yet to be established (Figure II-A-3).

The establishment of Highland's regional identity necessarily includes developing clear policies regarding development outside of the Highland city limits. State law requires that general plans cover all areas within the jurisdiction of the adopting city, as well as "any land outside its boundaries which, in the planning agency's judgement, bears relation to its planning" (Government Code Section 65300).

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As can be determined from the boundaries of the General Plan study area, planning issues related to the City of Highland are not always confined to the existing city limits. School districts, public utility service areas, and various special districts do not necessarily parallel City boundaries, even though they may have a significant impact on the development of the local community and its ability to provide services.

Highland's General Plan must reflect these realities by including areas both inside and outside the city limits within the study area. It is therefore necessary to resolve these potential conflicts by obtaining a full understanding of other agencies' concerns and integrating such potential issues into the General Plan process (Government Code Sections 65103(e)(f), 65351, and 65352).

City Boundaries

Since the long-term interests of Highland and the County of San Bernardino are not always the same in regard to development within the sphere of influence, cooperative efforts with the County cannot be relied upon as the sole means of coordination between City and unincorporated land use management. It will be in Highland's best interest to develop annexation strategies for the unincorporated portion of the General Plan study area.

California annexation law requires the consent of landowners within uninhabited areas, and of registered voters within inhabited areas, to permit lands to be annexed into a city. The wide variation in the circumstances of unincorporated and incorporated lands surrounding the City of Highland will necessitate different approaches to annexation in different areas.

Issues

Community Structure

Challenges to Highland's future image can be identified as those elements which lack the necessary focus to maintain a city which residents can be proud to be a part of, and which visitors find to be a place which evokes a positive and memorable experience. The following issues and opportunities begin to break down the individual parts of the different community structure elements which will need either to be addressed or maximized before the City's ultimate vision can be realized.

Community Districts

West Highland Community District

Many older structures in this area are dilapidated and in need of rehabilitation. The City will need to consider the provision of financial incentives, such as those available through City redevelopment programs, to residents and businesses in these areas to encourage rehabilitation of these structures.

The area in and around Ward Street and Cunningham Street has been in decline, in recent years. Apart from the existing efforts being made to rehabilitate the area, the development of a neighborhood revitalization strategy is needed.

A fire station will be needed in the general area of Ninth Street and Sterling to better serve the overall west end of the City.

Commercial zoning conflicts with existing single-family, mobile home parks, and apartments along Ninth Street; a clear decision as to future land uses in this area is needed.

Area infrastructure might not be adequate to support intensification of land uses in some areas. Studies should be done in these areas to ensure that adequate infrastructure is provided before any future development or redevelopment occurs.

The Base Line Corridor presents an inconsistent image to the community. Rapid turnover in businesses along this street have left a number of vacant or underutilized commercial uses. Features along this corridor which would indicate its relationship to the rest of the community as a vital commercial street are nonexistent. Studies should be undertaken along the full length of the Base Line Corridor to establish general guidelines for its development. Since Base Line is the primary image nonresidents experience when traveling through the community, image enhancement efforts should be focused throughout this important commercial street.

East Highland Transitional District

Sensitive planning will be needed to ensure that the freeway will not significantly impact existing land uses within the eastern portion of the City and that new opportunities for the development of freeway-related commercial uses, which enhance the City's tax base, are fully realized. In order to balance these issues, the following issues will need to be addressed as they pertain to development along the freeway corridor:

- The freeway could impact existing residential neighborhoods with additional surface street traffic, noise, air pollutant emissions, and loss of scenic views. Buffer areas may be needed to minimize freeway impacts to residential neighborhoods.
- The freeway could also present a number of opportunities. The advantage of freeway proximity and access will enhance the potential for new commercial development within the City. Freeway interchanges, such as the one planned for Base Line, will expand opportunities for additional commercial growth along the City's major commercial corridor.
- The freeway will emphasize the physical division of areas to the east and west. It will be important to create and maintain a unified City image.
- There will be a loss of open space to the freeway right-of-way, which could detract from the visual quality of the area.
- Landscaped areas should be considered along the freeway corridor to buffer and accentuate distant views of the San Bernardino Mountains. Landscaped parkways can be both a visual and recreational amenity. They could be used to maintain a connection between the riparian area of City Creek as well as to provide a north-south trail connection through the City from the Santa Ana River to the foothills.
- Two proposed freeway interchange sites offer fiscal opportunities to the City, but the presence of schools and existing housing at the Base Line intersection may deflect many opportunities south of the Fifth Street interchange.

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Several established neighborhoods within this transitional area are now or will be isolated from the surrounding community by either the freeway, major arterials, or City Creek channel. Since many of the neighborhoods have both existing development and adjacent vacant land to be developed, methods will need to be created to ensure that the fabric of each neighborhood is not adversely affected by infill development.

The intersection of Base Line and Boulder Avenue, due to its central location within the City and nearby freeway access, could become significant as a community commercial area. In addition to the existing commercial shopping center, other commercial support services could be provided in this area. Neighborhoods which are located to the south, however, will need to take primary access through this commercial area. New commercial development will need to be sensitive to the circulation needs of adjacent residential development.

City Creek is a significant water resource crossing through the General Plan study area. It is a managed resource as well as a visual amenity. It is important that future planning efforts are sensitive to this area.

The East Highlands Transitional Area contains a majority of the existing equestrian-oriented residential uses in the City. Buffering and transitioning such uses will need to be addressed as an issue, as new development is proposed in the area.

Given the area's relationship to the freeway and Boulder Avenue, parcels along Fifth Street have increased potential for Business Park and Commercial uses. The issue of master planning the area to take advantage of the potential access to transportation will be critical to the success of the area.

The ultimate reuse of the Norton Air Force Base will have an effect on land uses within the flight path boundaries. In addition, restrictions on land use, such as those imposed in the ACUZ, may be applied to future land uses.

East Highland Community District

The East Highlands Ranch is a significant master-planned community that will contribute positively to Highland's image. The location of East Highlands Ranch, adjacent to a national forest, increases its desirability as a residential address. The diversity of housing types and prices offered will meet the needs of people at various incomes and age levels. Issues such as those which follow do exist, however, and should be addressed as the East Highlands Ranch and surrounding areas develop:

- New commercial development provided as part of East Highlands Ranch will provide needed commercial services in the eastern portion of the City and continue to expand the City's limited commercial base, providing valuable sales tax revenues to the City. Careful planning will be needed to ensure that the existing standards for development in the area are maintained in new development throughout the area.
- A portion of the City and sphere of influence is within Fire Zones I and II. The area north of Base Line is located within Fire Zone II (for additional information as to the significance of this classification see also the Public Health and Safety Element). East Highlands Ranch is initiating development of a fire buffer along its northern perimeter. The City should work closely with the Fire Department to ensure adequate fire prevention and safety from fire hazards.

Land Use

- As development occurs next to the East Highlands Ranch development, the City will need to decide what standards will be used to transition the master-planned uses to adjacent residential and commercial development. In addition, existing uses in the area have been largely agricultural or large-lot equestrian in nature. The protection of these lifestyles as development transitions outward from the East Highlands Ranch and in other parts of the City will need to be considered.

Environmental constraints that will affect future land uses, are present in many portions of the study area. City Creek, a major drainage facility in the study area, will present a significant development constraint. Also, a seismic hazard zone crosses the northerly portion of the study area in and near the East Highlands Ranch, and will present constraints to surrounding development. Sensitive planning efforts are needed in these areas to ensure community safety.

Additional population will increase the need for the extension of infrastructure and public services. Evaluation of needed improvements is necessary to ensure provisions of these facilities and services to future residents of the eastern portion of the General Plan study area.

Greenspot Sphere

The Greenspot Sphere interfaces with the San Bernardino National Forest and will need to be sensitively planned to ensure that appropriate land uses are designated in these areas.

Portions of the Greenspot Sphere lie within an Alquist-Priolo Special Study Zone. The San Andreas Fault runs through the corridor along the toe of the slope of the San Bernardino Mountains. The majority of the Greenspot Sphere consists of floodplain associated with the Santa Ana River, which extends from the northeast corner of the area to the southwest.

The Santa Ana River Wash contains significant biological habitats, and is home to rare and endangered plant species, such as the Santa Ana River Woolly Star.

The Santa Ana River Wash also possesses significant potential for recreational use. Certain forms of recreational development might be inconsistent with the area's biological values, or could place high levels of traffic in the area, inconsistent with the sphere area's rural character. In addition, there are a number of other tributary washes and ravines which have open space values and are ecologically sensitive.

Any future development in the Greenspot Sphere will need to ensure that provision of public services will not drain City resources. One way to accomplish this would be through the formation of a community facilities district.

The Greenspot Sphere contains large blocks of open land under unified ownership which will facilitate integrated planning and development. Views and topography in this area lend themselves to upscale residential development. Since this area is currently underdeveloped, an opportunity exists to establish and reinforce the identity of the City of Highland.

The Santa Ana River, which runs through a large portion of the Greenspot Sphere, is to have a regional bike/equestrian/hiking trail and recreational network along its entire length, from the San Bernardino Mountains to Huntington Beach. This will provide a significant recreational opportunity to Highland residents.

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Community Features

Historic Village District

Many of the commercial structures in this area are in various states of disrepair. Revitalization programs should be created using such resources as the City Redevelopment Agency to assist in the rehabilitation of this area.

The district has a number of physical constraints related to parking and circulation which will need to be addressed. The issue as to how traffic will move through and within the village will be a major issue which will have to be overcome before preservation efforts will be successful.

Currently, the village district area does not possess a viable market area which could support significant commercial development. In order to initiate any type of commercial development in this area, a market area will need to be created.

The existence of older industrial structures raises questions as to suitability of industrial development in this area. Market studies should be done to determine the appropriate uses for this area.

There is an opportunity to preserve and enhance remnants of the City's heritage. The old commercial core could be revitalized as a specialty shopping and office area.

Restoration and preservation of historical, residential, and commercial structures could assist in the overall revitalization of the Historic District as a commercial center by stimulating interest and investment in the area. From a social viewpoint this would have many benefits including the following:

- Older buildings, continued in uses over long periods, evoke a sense of continuity.
- The survival of large portions of the past gives a sense of security and a sense of place.

Historic preservation policies within the Land Use Element can establish a strong policy statement for the continued preservation of the historic environment with the involvement and commitment of Highland's citizens. The City has a challenge to continue to use its past, in the form of existing resources, to create the best possible future.

Presently, the only financial incentives that exist for property owners of historic structures are the provisions of the Mills Act. In order to attain the City's desired urban development goals, it will be necessary for the public sector to lead the way by forming a partnership with private property owners, based on a system of incentives extended by the City. Incentives, such as a modified historic building code and low-interest rehabilitation loans would provide financial inducements to encourage rehabilitation and preservation.

Historically significant structures must be safeguarded to preserve the long-term character and quality of the District. It is important for owners of buildings which are in decline to seek alternatives to demolition. If a period of time were mandated for an applicant to wait before a demolition permit was granted, then alternatives, including finding a lot on which to relocate a house, might be found.

Norton Air Force Base Influenced Area

Although some information is available regarding the types of uses that will occur within Norton Air Force Base after military operations cease, there is a significant degree of uncertainty regarding the intensity of those uses, the intensity of aircraft operations which will occur, and the timing of development of civilian uses within the Base area. The City should stay informed of any development decisions or activity within the Base and plan future area improvements accordingly.

There is mixed quality industrial development along Fifth Street, as well as an incompatible mix of residential and industrial land uses on Meines Street. Standards are needed to upgrade existing and future industrial development uses within the City.

Some residential uses in the vicinity of Norton Air Force Base are located in areas which are undesirable for housing because of impacts from current aircraft activities. These impacts may change significantly when the Base is converted to civilian use.

The potential for additional commercial/industrial development may be enhanced by future activities at Norton. Land in proximity to the base could transition to larger scale commercial/industrial development, enhancing the economy of Highland.

Future activities at Norton Air Force Base will affect whether development in the area of Boulder Avenue and Fifth Street will be commercial or industrial. Airport support uses may be a viable option for this area.

When converted to civilian use, future activities at Norton Air Force Base will broaden the types of commercial and industrial uses which might be viable in the adjacent area.

Base Line Corridor

This primary east/west corridor presently has a negative visual image. Problems consist of poor signage, deteriorating facades, inconsistent building setbacks, stark parking areas, and overhead utilities.

Strip commercial zones along Base Line consist of fragmented, shallow lots which are not conducive to centers or developments with scale and integrity. Commercial uses are in need of revitalization.

Although Base Line is the primary gateway from the west, there is no clear sense of entry due to meandering city limits.

Consolidation of small lots could provide visually integrated large commercial developments. The former Cunningham drive-in theater site also represents an opportunity for a commercial center and/or master-planned project on a large parcel.

The proposed freeway interchange at Base Line will provide freeway access from the Base Line Corridor, thus providing an opportunity for commercial development from the freeway west to Palm Avenue, and east to Boulder Avenue.

Design unity along the length of the Base Line Corridor could provide a sense of identity for this area. This could be accomplished through street improvements, intersection enhancements, building facade treatments, landscaping, street furniture, and coordinated signage as part of an overall strategy or specific plan.

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Santa Ana River

Since this feature is a naturally occurring watercourse, large areas are subject to flooding, and will require special protection prior to development.

Significant pressure exists to remove natural vegetation and establish or expand mineral extraction operations. The expansion of mineral extraction within the riverbed has the potential for impacting the quality of life in Highland due to the specific characteristics of mineral extraction operations and their inherent incompatibility with residential uses, as well as the significant amount of truck traffic which would be created through various portions of the City. Extensive mitigation will have to be considered as mineral resources are extracted, processed, and transported.

The increased demand for natural resources located within the General Plan study area will constrain future development efforts.

A small portion of the Santa Ana River wash area is within the Norton Air Force Base clear zone. Structures are limited within that area unless plans for the reuse of Norton Air Force Base alter the existing extent of the overflight impact.

There will be development pressure to build into the floodplain. Sufficient area must be reserved for groundwater recharge and public safety.

A master plan is needed for development of the wash. The City should work closely with County Flood Control and the Water Conservation District to ensure future planning of this area.

The eastern portion of the River corridor provides a peaceful, natural setting which would facilitate high-quality rural and equestrian-oriented development in areas not subject to flooding. Reclamation of existing mineral extraction operations will repair scarring of scenic resources, and will provide additional land use opportunities.

Highland could capitalize on the fiscal potential from mineral extraction operations by considering a mineral extraction tax, as well as addressing environmental effects and community perceptions.

Community Design

Strategic planning will be necessary to ensure the preservation of Highland's image as a suburban bedroom community, as well as to provide needed commercial and industrial uses.

Since the City does not have an overall design framework aside from planned developments, it will be necessary to establish specific design policies and standards to establish and ensure the future character and image of the City of Highland.

Currently, the City of Highland offers no rehabilitation guidelines for older properties to insure that they are rehabilitated in an architecturally compatible manner. Many of the property owners are uninformed as to the appropriateness of architectural rehabilitation of historic buildings and homes. Guidelines which direct rehab in density, bulk, site coverage, setbacks, open space, parking, and architectural features will insure that restoration of the Historic District will preserve the character of the area.

Land Use

Regional Cooperation and Coordination

Since many of the public facilities and services provided to the City of Highland do not follow City boundaries or serve more than one community, regional coordination between these agencies, the City of Highland, and other surrounding communities will be required.

Irregular City boundaries within the Historic townsite area place portions of the City of San Bernardino at the center of the townsite. Significant coordination efforts between the City of Highland and the City of San Bernardino will be required to ensure preservation of this area.

City Boundaries

Because City boundaries do not necessarily follow logical lines, there is little separation from adjacent jurisdictions. Thus, Highland is greatly affected by land uses which are located, and land use decisions which are made outside its corporate limits. In addition, the irregular City boundaries in this area make it difficult to establish clear City entry points.

Concepts, Options, and Alternatives

Community Structure

As described in the Existing Setting portion of this Element, Highland's existing community structure is well defined by several physical divisions. Each of the Districts integrates many smaller neighborhoods into a larger identifiable unit. The key to the City's success in creating the desired community structure for the future will depend on the ability to create solutions to identified issues and capture the potential opportunities inherent in each of the existing Districts, while at the same time emphasizing an overall community identity and image.

Using the urban design elements described in the Existing Setting, the following concepts, when implemented, will form an overall community structure and image enhancement program.

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Community Structure and Image Enhancement Program

Program Concept

Development of an overall community structure which recognizes the community's unique opportunity to offer a variety of lifestyles to its residents within distinct community areas while maintaining an overall sense of place and identity as the City of Highland.

Program Objectives

City and Community District Identification

In order to achieve a sense of City identity throughout the region, the City will need to select a unifying theme or themes which both citizens and visitors can identify with the City of Highland. Generally, two concepts, Citywide identification and promotion, and neighborhood identification, could be used to reinforce the identity of both the City and neighborhood areas.

- Citywide identification and promotion could include the development of a Citywide signage program to take advantage of primary and secondary gateway opportunities. Signage concepts could also include specialized City identification throughout the City as a recurring theme element. Examples of this concept might include using the City logo on all street signs, street furniture, public improvement notices, and public facility identification signs (i.e., parks, community centers, fire and police stations, etc.).
- Using the existing community structure as a framework, a hierarchy of District and neighborhood signs could be located throughout the City. Signage at District edges would give residents a sense of arrival. The identification of neighborhood areas may also help in the creation of a sense of place for residents. Used as a standard marketing tool by developers, the City has an opportunity to take advantage of existing marketing programs to create a standardized neighborhood signage program for new development.
- Developed residential and commercial areas may want to participate in the identification programs by using "adopt a sign" techniques to pay for the creation of such signage in existing developments. Such a program could inspire local community groups to donate time and effort to raise the funds to pay for special neighborhood or area signage in exchange for City recognition.

Community Feature Enhancement Strategies

The enhancement of existing identified community features within the City serves to focus on the development of already recognizable elements of the community structure in an effort to add to the City's image and identity. This concept builds on the idea that these features will set the stage as "anchor image areas" for the rest of the community to follow. It would be for these areas that the City would provide the most focus in developing their full image potential.

Historic District

The City of Highland recognizes the importance of its Historic District as an integral part of the community structure, and seeks the proper balance between preservation of its historic resources and redevelopment of substandard housing. The development of an appropriate preservation program will recognize, enhance, and protect the historic, architectural, and design features of the City. The following strategies are formulated in the belief that their implementation will add to the cultural richness and diversity offered to the residents of Highland, as well as increase the economic vitality and benefits to the City and its residents.

Enhancement Objectives: Strategies to enhance the Historic Townsite Community Feature should include the following objectives:

- Raise the level of the community's awareness of the history of the City of Highland by maintaining a constant educational emphasis during the restoration and rehabilitation of the Historic District.
- Make the private sector a partner in the preservation process by allowing incentives to businesses who are willing to participate in innovative programs designed to re-establish the Historic District as a community and cultural activity center.
- Ensure that the surrounding residents and the community at large is involved in the development of the District to enhance the sense of community pride in the project.
- Develop special guidelines and standards for new development and remodeling projects within the District which both encourage the use and/or rehabilitation of existing historic structures and provide incentives for the development of new homes and businesses within the area which are compatible with the character of the townsite.
- Establish historic development guidelines based on concepts outlined in the General Plan Community Design Appendix.

Norton Air Force Base Influenced Area

The Norton Air Force Base has historically had influence on the cities which surround it. New development with the boundaries as part of the future reuse of the Base will definitely have an effect on areas within the City of Highland which are located directly north of the Base. This "influenced" area represents one of the potential main access points from the Base north to Base Line and east to the new 30 Freeway. The following strategy incorporates these opportunities into the City's future enhancement program.

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Enhancement Objectives: Strategies to enhance the Norton Air Force Base Community Feature should include the following objectives:

- Treat the entrance into the City at Victoria Avenue and the Norton Air Force Base as one of the more prominent gateways into the community through the provision of City signage, landscaping and specialized development restrictions to create landmark architecture near the corner of Third Street and Victoria Avenue.
- Create an identifiable theme for the area which establishes a connection between the varied housing opportunities within the City of Highland and the potential for nearby jobs by emphasizing a vibrant mixed use development pattern.
- As an enhancement to investment in the area, pilot projects should be undertaken by the City focusing on positive aspects of the area, and which demonstrate opportunities for the consolidation of parcels. Such projects should strive to involve the private sector in a public-private partnership relationship to the extent that this is feasible.

Base Line Corridor

The Base Line commercial corridor represents the existing commercial and transportation spine within the community. This corridor's importance as a major transportation route in the future will become even more prominent as infill commercial developments are constructed along the corridor. In order to encourage the development of such construction, the following strategies focus on design and development guidelines which provide both guidance and incentives for the corridor.

Enhancement Objectives: Strategies to enhance the Base Line Corridor Community Feature should include the following objectives:

- Combine the Base Line Corridor with other major streets within the City in the development of a Highland Corridor Study which will provide streetscape enhancements, circulation improvements, and architectural guidelines.
- Develop examples of design concepts in concert with the corridor study which promote the creation of landmark architecture within commercial nodes at major intersections along the Base Line Corridor.

Santa Ana River

A major contributor to the City of Highland's sense of place, the Santa Ana River offers an area rich in both mineral and natural recreation resources. The stewardship and enhancement of these resources are the main focus of the following objectives and strategies.

Enhancement Objectives: Strategies to enhance the Santa Ana River Community Feature should include the following objectives:

- Participate in the implementation of the Santa Ana River Trail System by coordinating the Highland Bike Trails and Multi-Use Trails systems with the Santa Ana River Trail. Create informational signage which coordinates with City signage efforts, that directs trail users to activity areas within the City.

- Encourage cooperation with mineral resource extraction agencies in plans for mining and reclamation of the river channel in order that unobtrusive extraction techniques are used to limit the impact of mining operations on adjacent existing and future residential and recreation uses.

Implementation Concepts

As the structure of the community develops, it will be necessary to provide fundamental parameters for development. The following discussion frames the basic development concepts which will need to be used to implement the Community Structure and Image Enhancement Program within the entire community.

Neighborhood Planning

Significant variation of land uses within portions of the Highland General Plan study area could promote the identification of neighborhood areas. Identifying neighborhood areas and understanding their individual structures (i.e., landmarks, gateways, paths, and edges), along with the distribution of intensity of development could serve as the benchmark for future land use decisions by establishing patterns within each neighborhood that fit into the overall structure of the community. This new land use assessment "tool" would fill the gap in the existing land use review hierarchy between general Citywide policies and more specific development proposals.

Planned Development

The use of a comprehensive planned development process provides both the City of Highland and a prospective developer with the opportunity to establish specialized specifications and implementation programs tailored to the unique characteristics of a particular site. Planned Development could be implemented using Specific Plans, Planned Unit Developments, or other similar mechanism. Such plans help implement the General Plan by:

- eliminating incremental development through the consolidation of small parcels into an overall cohesive project design;
 - reducing the cost of capital facilities and public infrastructure improvements by eliminating uncertainties as to future utility, transportation and school capacities;
 - protecting sensitive environmental resources;
 - providing flexibility in standards and design to meet the needs of a variety of socio-economic groups; and
-
- implementing General Plan goals, concepts and strategies for an identified area of the community.

Planned Development can be especially effective for sites with major environmental, public service, or fiscal constraints. Density which may be lost to the preservation of natural open space, for example, may be transferred to other areas in the plan where service and transportation needs may be handled more efficiently and not impact environmentally sensitive areas. Since planned developments generally cover larger areas, the opportunity to finance needed community facilities such as major flood control improvements, recreation areas, and major roadways is much enhanced.

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Such comprehensive planning allows the City to decide on a specific and comprehensive land use pattern well in advance of development, rather than debating development issues on a site-by-site basis. Such a process is advantageous to developers, since the size and location of capital facilities will have been decided up-front, thereby reducing unexpected future costs.

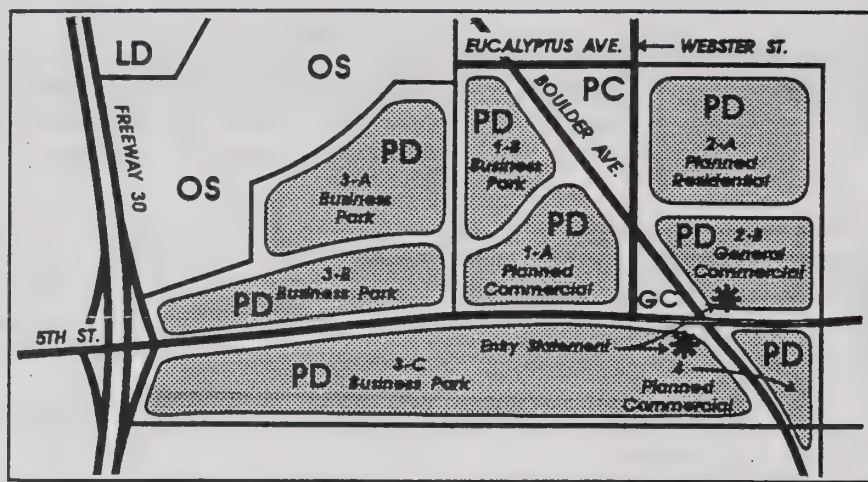
The ability to implement innovative resource conservation and recovery programs is also a major advantage derived from the use of planned development as a General Plan implementation tool. Community service centers which include commercial shopping, high density residential, schools, churches and recreation facilities can be centralized in commercial/high density residential activity areas, and tied to surrounding residential areas by pedestrian and bike trails to reduce auto related trips. Specialized water, energy and communication systems can be easily and relatively inexpensively incorporated into initial infrastructure improvements to enhance the living environment and save energy resources.

The following section describes unique sites within the General Plan study area where the implementation of the planned development concept is encouraged. These future planned development areas are intended to establish a basis for land use policy from which a comprehensive specific plan, planned unit development or other techniques can be developed.

Scenic Highways

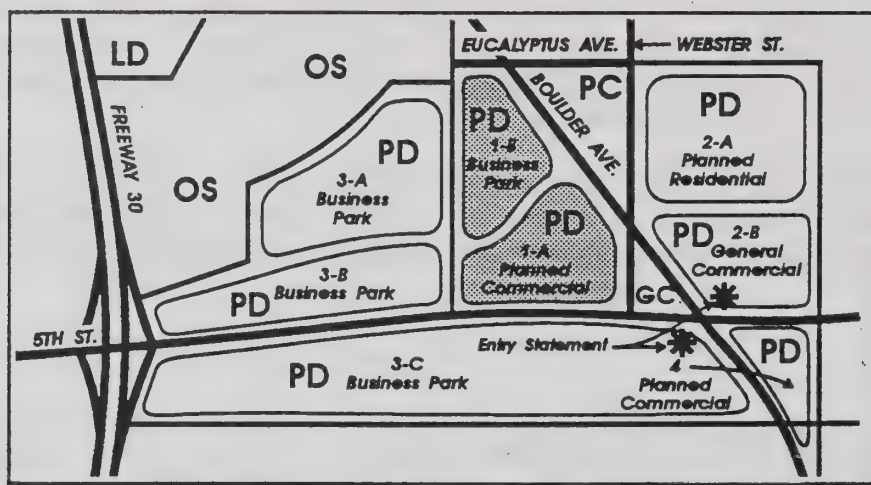
The City of Highland's physical setting lends opportunities for many views and vistas of the community and surrounding natural features. Although a great deal of what can be considered scenic in the study area can be seen throughout the City, the eventual buildout of the study area will have an impact on existing viewshed. The establishment of a scenic highway system affords the city an opportunity to create scenic highway setbacks along designated roadways to both preserve viewshed and enhance street amenities. Such setbacks may include vehicle turnouts with interpretive information; bicycle, walking, and equestrian trail alignments and staging/rest areas; or enhance and coordinate existing streetscape landscaping themes.

Streets in the study area which are most likely candidates for designation of scenic highway status include: Greenspot Road, Church Street, Boulder Avenue, Palm Avenue, Base Line (east of City Creek), and are discussed in the Scenic Highways section of the Circulation Element.



Fifth Street and Boulder Avenue, 206.0 Acres

Overall Development Concept: Located at the intersection of Fifth Street and Boulder Avenue, this area represents one of the major entrance points into the City. As such, the General Plan intent for this area is to facilitate a master planned mixed use type of development large enough to cater to both residential and retail uses within a well coordinated group of individually designed projects. Because the area represents the first impression visitors will have of the eastern portion of the City, enhanced design features, such as landmark types of architecture at major intersections, along with City signage, are expected to be provided as part of the development design. The area is also intended to provide the opportunity to develop business park uses which offer both commercial and office uses along major streets and limited light industrial uses within the interior of each area. This area can be broken down into four "sub-areas" as follows:



Area 1: 39.0 Acres

Development Concept: Located northwest of the intersection of Fifth Street and Boulder Avenue, this area reinforces the area's establishment of a major gateway into the City. Because this first impression visitors will have is important to the City, enhanced design features, such as landmark types of architecture, are expected to be provided as part of the development design. In addition, it is expected that development along the street frontage along the western boundary of the area be consistent with the scale and intensity of the adjacent Business Park designations. Land use and intensity can be described as follows:

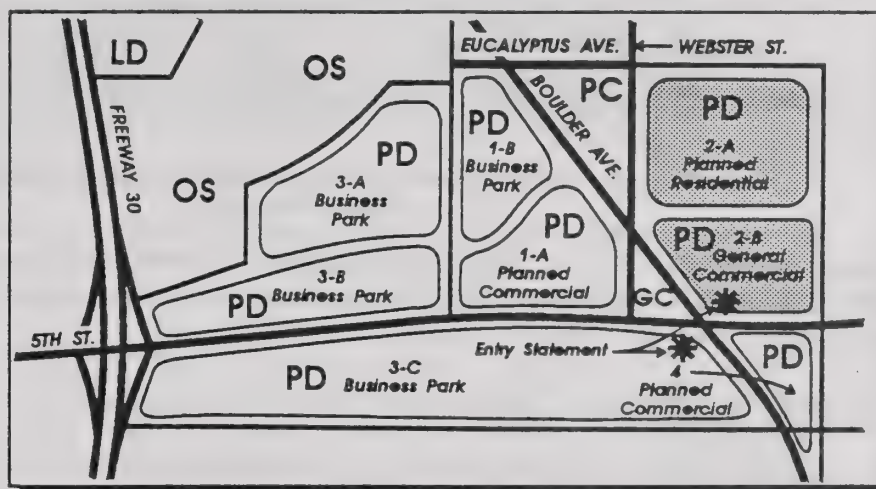
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Sub area 1A: Planned Commercial Development with a mix of General Commercial, Office Professional and Business Park uses. Commercial designs within this area should relate to both the adjacent major roadways and Business Park development to the west and south.

Sub area 1B: Area would be limited to Business Park Uses which are consistent with the General Plan Business Park Designation.

Land Use Intensity: The land use intensity for the this category will be determined upon the adoption of a specific plan, PUD or similar mechanism for the designated area. The underlying land use intensity for this area shall be as follows:

- Sub area 1A: 19.0 acres - Planned Commercial with a Floor Area Ratio (FAR) of 0.40.
- Sub area 1B: 20.0 acres - Business Park with a Floor Area Ratio (FAR) of 0.45.



Area 2: 46.0 Acres

Development Concept: Located north of the intersection of Fifth Street and Boulder Avenue, this area represents one of the major entrance points into the City. Because the area represents the first impression visitors will have of the City's eastern portion, enhanced design features, such as landmark types of architecture and city signage, are expected to be provided as part of the development design.

Entry Statement: Location for thematic community entry.

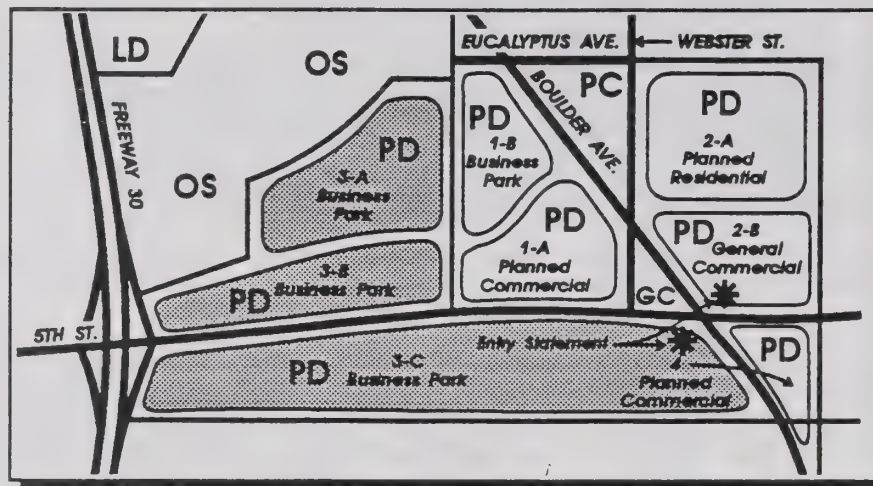
Sub area 2A: Planned Residential Development with single family residential 7,200 sq. ft. lots.

Sub area 2B: Planned Commercial Development with a mix of General Commercial and Office Professional uses. Commercial designs within this area should relate to both the adjacent major roadways and residential development to the north.

Land Use Intensity: The land use intensity for the this category will be determined upon the adoption of a specific plan, PUD or similar mechanism, for the designated area. The underlying land use intensity for this area shall be as follows:

Land Use

- Sub area 2A: 26.0 acres - Planned Residential with a maximum density of 12.0 du/ac.
- Sub areas 2B: 20.0 acres - General Commercial with a Floor Area Ratio (FAR) of 0.40.
- Entry Statement: Variable depending of ultimate design of community entry statement.



Area 3: 121.00 Acres

Development Concept: This area provides the employment base which the adjacent commercial and office development will support. The architecture in this area will be expected to set the standard for future projects of similar designation throughout the City.

Entry Statement: Location for thematic community entry.

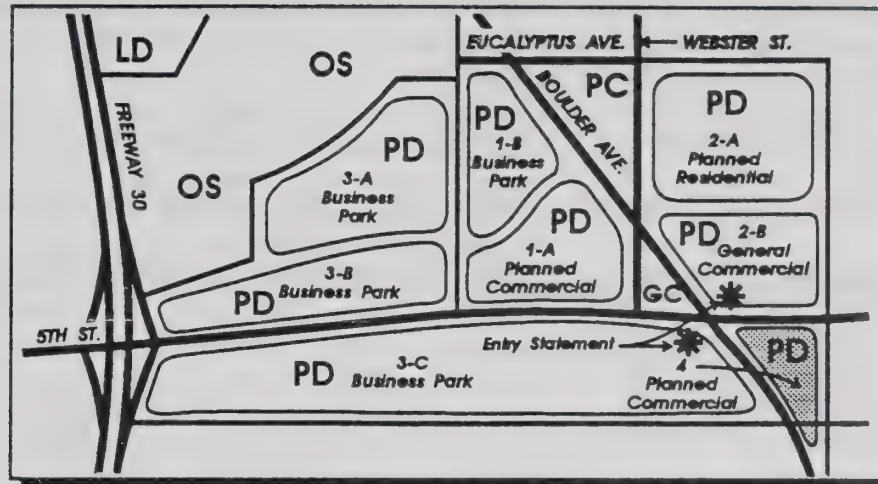
Sub area 3A: Business Park development providing opportunities for industrial, research and development, and office-based firms located within an attractive working environment.

Sub areas 3B and C: Business Park Development with an emphasis on the provision of a mix of General Commercial and Office Professional uses along the Fifth Street Frontage. Commercial designs within this area should provide transitions to adjacent business park areas.

Land Use Intensity: The ultimate land use intensity for this category will be determined upon the adoption of a specific plan, PUD, or similar mechanism for the designated area. The following underlying land use intensities for this area shall be used as guidelines for the development of each sub area:

- Sub areas 3A: 40.0 acres - Business Park with Commercial emphasis with a Floor Area Ratio (FAR) of 0.40.
- Sub area 3B and 3C: 81.0 acres - Business Park with a Floor Area Ratio (FAR) of 0.40.
- Entry Statement: Variable depending of ultimate design of community entry statement.

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Area 4: 6.25 Acres

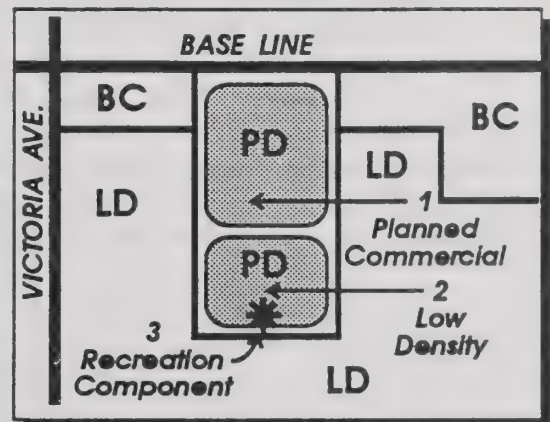
Development Concept: Located on the east side of the intersection of Fifth Street and Boulder Avenue, this area will represent one of the first impressions visitors get of the City of Highland. Planned Commercial development on this site should provide enhanced design techniques, such as landmark types of architecture and City signage.

Land Use Intensity: Planned Commercial with a Floor Area Ratio (FAR) of 0.45.

Base Line and Cunningham Drive-in Site
18.8 Acres

Development Concept: The former Cunningham and Base Line drive-in site represents an opportunity to provide a quality mixed use project as a catalyst in the area. However, the depth and physical dimensions of the property will have an effect on the adjacent residential land uses. It will be necessary, therefore, to integrate the ultimate design of this site into the existing pattern of the neighborhood.

Sub area 1: The northern portion of this site shall be designed for Planned Commercial Development. The depth of the project as measured from the Base Line right-of-way shall be based on the design's ability to meet market objectives.



Sub area 2: The remaining portion of the site shall be designed to accommodate Planned Residential Development, which is in character with the adjacent neighborhood.

Sub area 3: As part of the residential component of this site, a minimum of two acres shall be designated for a recreational use. The City shall consider granting residential density bonuses in exchange for parkland dedication and improvements.

Land Use

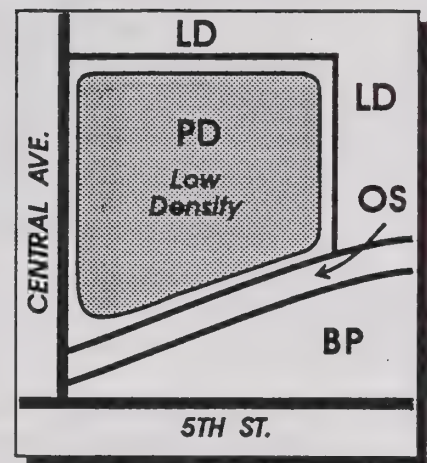
Land Use Intensity: The land use intensity for the this category will be determined upon the adoption of a specific plan, PUD, or similar mechanism for the designated area. The underlying land use intensity for this area shall be as follows:

- Sub area 1¹: 12.00 acres - Planned Commercial with a Floor Area Ratio (FAR) of 0.40.
- Sub area 2: 6.8 acres - Planned Residential with a maximum density of 6.00 du/ac.
- Sub Area 3: Design of park site to be coordinated with Residential Development.

Development Concept: This 30-acre parcel, located on the east side of Central Avenue between Cypress Avenue and Fifth Street, is currently owned by the Department of Defense/Air Force (DOD/AF). The site is divided into two parts; a 20-acre residential component, and a 10-acre public park site.

Land Use Intensity: The land use intensity for the this category will be determined upon the adoption of a specific plan, PUD, or similar mechanism for the designated area. The underlying land use intensity for this area shall remain at a maximum of 6.0 du/acre for the Residential component. It is expected that 10 to 15 acres of the parcel would be reserved for public use as a City park facility.

Central Avenue Residential/
Recreation, 30 Acres

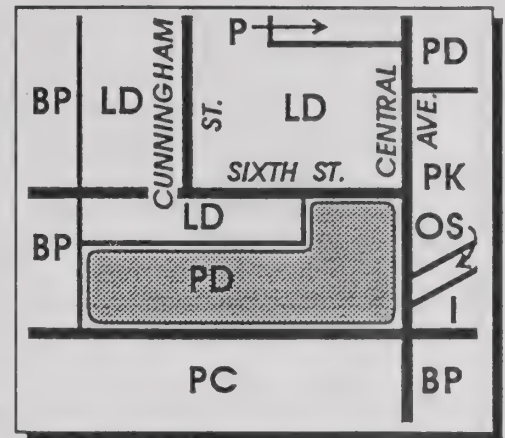


¹ The development area of sub-areas contained within this Planned Development designation could change depending on the overall design of the project.

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Ward Street and Cunningham Street Area, 26 Acres

Development Concept: The City recognizes that residential property in this area has deteriorated over time. It is the City's intent to arrest the existing residential decay and rehabilitate multi-family housing within the Cunningham Street and Ward Street area. It is further recognized that with the transition of Norton Air Force Base from a military base to civilian aircraft related industrial, commercial, and business park uses, the investment potential in the area in the long-term future will most likely be non-residential in nature. Providing for both the short, mid, and long term potential of the area, the City is willing to entertain non-residential development proposals in this area provided they address the following concerns:



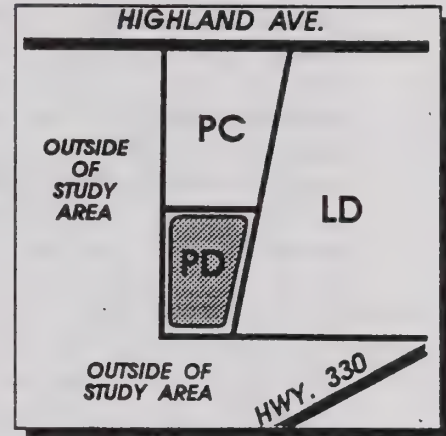
- Proposed non-residential uses are developed in logical phases which do not create a "checker board" pattern of different uses.
- Proposed uses orient activities away from adjacent development and/or include the creation of appropriate buffers and transitions.
- Individual developments provide for the consolidation of joint facilities such as, but not limited to, driveways, parking areas, loading access, and landscape.
- All mixed-use developments (i.e. a mix of residential and non-residential land uses) comply with applicable General Plan policies and City ordinance provisions.

Land Use Intensity: The land use intensity for this area will be determined upon the adoption of a specific plan, PUD, or similar mechanism for the designated area. The underlying land use intensity for this site shall Medium Density (MD) in character with a maximum of 20 du/acre residential and a .40 Floor Area Ratio (FAR) for Business Park.

Hi Ho Christmas Tree Farm, 12 Acres

Development Concept: Development within this area is to be Low Density (LD) in character, unless a senior oriented development is proposed whereby an alternative density would apply. It is also the intent of this designation, that as part of any proposed senior development, pedestrian linkages to commercial development to the north be provided/allowed for in the development design.

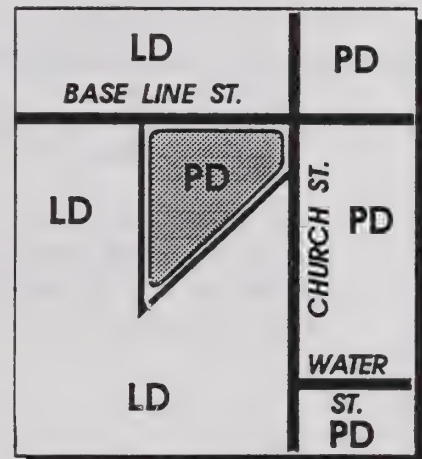
Land Use Intensity: The land use intensity for this area will be determined upon the adoption of a specific plan, PUD, or similar mechanism for the designated area. The underlying land use intensity for this site shall be Low Density (LD) with a maximum density of 8 du/acre, or 18 du/acre if the property is developed as a senior housing development.



Baseline and Church Street 8.3 Acres

Development Concept: This 8.3 acre parcel will provide for the potential of existing residential uses to transition to an increased density (maximum 6 du/ac) or other commercial uses. If commercial uses are proposed, the project must encompass the entire Planned Development Area and must provide the appropriate design techniques described in the Community Design Appendix.

Land Use Intensity: The land use intensity for this area will be determined upon the adoption of a specific plan, PUD or similar mechanism. For residential projects, the underlying land use intensity shall be 6 du/ac. A single Planned Commercial project may also be proposed at a maximum Floor Area Ratio of 0.75 (FAR).

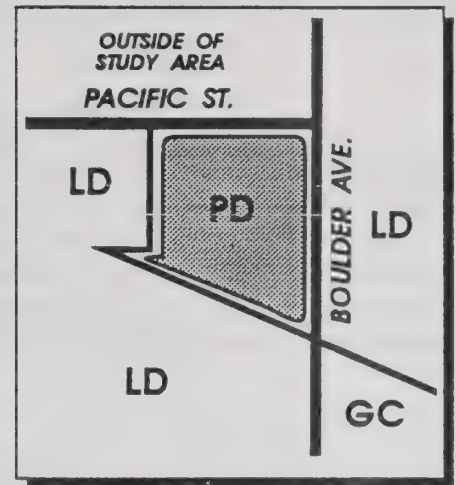


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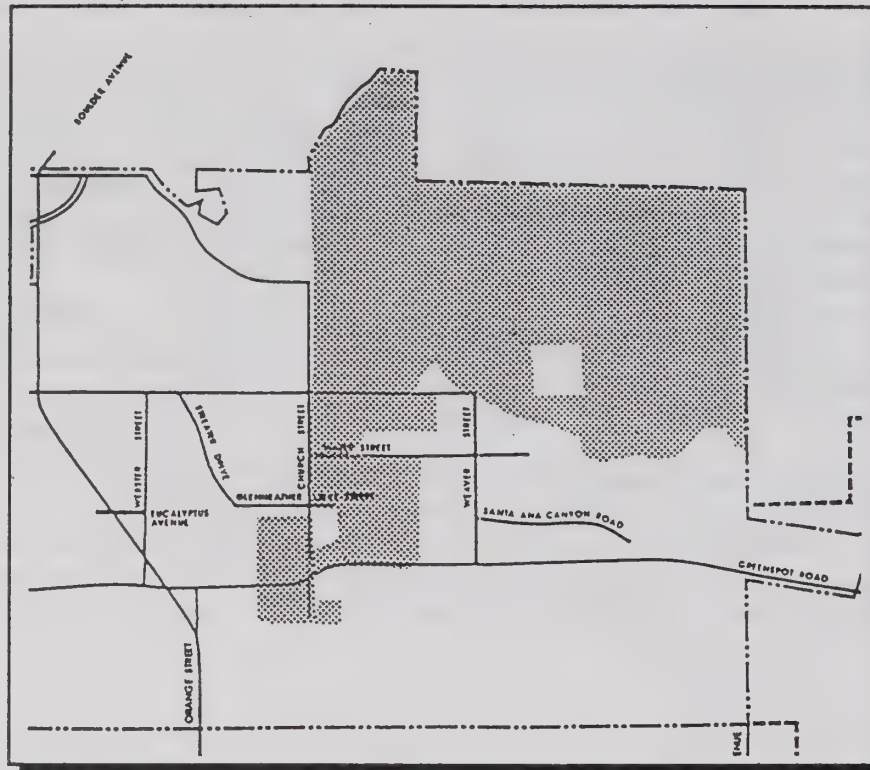
Pacific Street and Boulder Avenue, 20 Acres

Development Concept: Development within this area will allow for residential and non-retail office uses in a mixed-use context. Individual parcel development may be required to produce a conceptual master plan of the area which respects and is consistent with adjacent parcels in order that circulation, parking, buffers, and transitions can be integrated. It is also the intent of this designation to use the mixed-use development pattern to both integrate low density residential and buffer surrounding residential properties. Office development will be oriented towards major street frontages with residential toward interior areas.

Land Use Intensity: The land use intensity for this area will be determined upon the adoption of a specific plan, PUD, or similar mechanism for the designated area. The underlying land use intensity for this site shall be Low Density (LD) with a maximum density of 6 du/acre, and Office Professional (OP) with a maximum of 0.50 Floor Area Ratio (FAR).



East Highlands Ranch, 1,803 Acres



Development Concept: This area encompasses the East Highlands Ranch Planned Unit Development, and surrounding areas. This East Highlands Ranch development plans for 684.4 acres of single and multiple family residential units; 42.1 acres of commercial, commercial office, and industrial uses; and 1,076.5 acres of active, visual, and natural open space.

Land Use Intensity: The land use intensity for this site is determined in the adopted Planned Unit Development (PUD). For the purposes of the General Plan, population estimates were taken directly from the approved PUD.

Single Family Residential Development

The size of single family residential lots should be large enough to accommodate the daily home-based activities of projected residents. In general, a 7,200 square foot minimum will be maintained for single family lots designed for family housing. In certain master planned developments, this minimum may be reduced if the project is designed to provide significant active open spaces and play areas.

Multi-Family Development

Recognizing the need for higher-density housing, the Highland General Plan provides opportunities for the development of multi-family developments in and around designated commercial areas and other appropriate areas. The combination of commercial and high-density development in commercial areas emphasizes clustering of high-density uses near service commercial uses to establish a pedestrian-oriented environment, thus reducing the number of daily trips on local roadways.

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Since much of what has been designated as new multi-family development on the General Plan Land Use Map occurs in areas adjacent to existing older single family residential development, infill concepts which serve to facilitate transition to higher densities without disrupting the low density character of the neighborhood will be necessary.

Residential Infill Development

One concept which could be used to revitalize neighborhoods in the community is allowing infill development in underutilized residential areas while preserving the character of the low density residential streetscape. Within the western portion of the study area, a number of homes have been built on narrow but deep parcels. As an incentive for property owners to make improvements to existing buildings, the City could allow the development of second units to be built on the same lot. These units could be considered rental units or as "granny flats" to be used as related senior housing (see Community Design Appendix, "Infill Development").

Commercial Development

Several types of commercial development have been designated on the General Plan Land Use Map. A commercial corridor which provides the majority of the regional commercial needs is located along the length of Base Line.

The importance of Highland's Base Line commercial corridor to the local commercial economy cannot be over-emphasized. The continuance of commercial activity along the corridor provides the City with its major source of local tax revenue. The establishment of such a linear concentration of commercial activity over the years, however, has increased the amount of traffic in that portion of the City and overburdened public streets and infrastructure.

Civic Center

As the primary political and social focus of the community, the future development of a Highland Civic Center complex would benefit the City not only as an attractive anchor development along Baseline to which other businesses could be attracted, but would provide a definite "civic core" for the community. A key component in this concept would be the development of specific and unique design/development guidelines which would foster both unprecedented private investment and ensure a design quality which could be duplicated along the Baseline Commercial Corridor. As part of these guidelines, a special mixed-use civic center designation would be created to allow for an enhanced flexibility in development standards.

Important goals associated with the establishment of the Civic Center designation would include:

- Development of a civic center which establishes a public service and social focal point in the community within a mixed use context.
- Establishment of specialized standards for development and design of civic uses which would be the basis for other projects along the Baseline Commercial Corridor.
- Creation of development incentives which promote private investment into the area, and/or foster public/private partnerships.

Land Use

- Development of retail commercial, office, and senior residential uses within a mixed use context which are complementary to and support civic uses.
- Promote the civic center as an "anchor development" as described in the Land Use Element's Community Structure and Image Enhancement Program.

Highland Corridor Study

The following General Plan concepts regarding the development of corridor studies and the establishment of commercial nodes provide opportunities for increased commercial activity and for a smooth flow of traffic throughout the area.

Corridor Study: An overall study of the specific issues facing the physical design of the City's major commercial corridors would be an appropriate concept to be explored. Such a study would establish design guidelines for new development, provide an analysis of the potential opportunities and constraints related to shared parking and reciprocal access, and incorporate suggestions for potential traffic improvements. The study should be composed of the following elements:

Goals, Objectives, and Policies: The goals, objectives and policies would specify what the study is designed to accomplish and establish a framework of policies for how specific goals and objectives will be achieved.

Concept Plans: The study should include the following component plans, in order to form the framework of the Highland Corridor Study:

- *Land Use Plans* for the entire corridor, including a series of sub area concept plans for specific and unique locations.
- A *Community Design Plan* which would detail various image enhancement elements, including gateway and entry treatments.
- *Community Design Guidelines* which provide specific design guidelines related to architectural imagery, landscaping, and site planning.
- *Circulation Enhancement Techniques* which offer examples for improvements to traffic flow and organization along the corridor.

Development Regulations: Clear and concise development standards to assure consistency with the identified objectives and policies.

Implementation Strategies: A description of the strategies related to the implementation of the study, financing programs, and schedule of priorities.

Commercial Nodes: Other than the Base Line Commercial Corridor, an additional commercial concept is proposed in the Highland Land Use Plan. Several specific concentrations of uses or "nodes", where clusters of commercial and higher-intensity residential uses would be emphasized, have been located at strategic locations throughout the City. These locations are intended to serve the basic needs of the surrounding residential neighborhoods, along with allowing opportunities to enhance the physical connection between residential, commercial, employment, and support uses.

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As these areas develop, it will be important to develop criteria that would be used to define each of the commercial nodes within the General Plan study area, such as:

- Locating commercial nodes at major intersections to ensure a functional circulation system.
- Establishing commercial nodes at strategic locations that will offer the City an advantageous share of the regional sales tax revenue.
- Ensuring the provision of convenient access to commercial centers wherever possible from adjacent high-density residential land uses.
- Establishing commercial nodes on a minimum one mile interval basis to serve adjacent neighborhoods, reduce vehicle shopping trips from areas outside the influence of the Base Line commercial corridor, and to avoid creating such a large number of nodes that their long-term viability is jeopardized.

Commercial Lot Consolidation: The Base Line Commercial Corridor includes many parcels which maintain substandard lot depths or widths. Many businesses would like to improve their property but are restricted from moving in new businesses due to current development restrictions. Guidelines for development along Base Line and other commercial streets in the City should include flexible standards which include incentives for lot consolidation, or for flexible parking restrictions. Incentives could include increases in allowable square footage or a reduction in parking standards. The development and use of nearby public parking areas may also allow increases in density by offsetting the need for more on-site parking (see also the General Plan Circulation Element).

Industrial and Business Park Development

Even though industrial development is a secondary land use emphasis of the City of Highland, several locations within the General Plan study area provide significant opportunities for industrial job creation.

The area adjacent to Norton Air Force Base provides several opportunities for future industrial and business park development within the Highland General Plan study area, and has been so designated on the General Plan Land Use map. The area is suitable for a wide range of industrial and business park uses, particularly those which could benefit from close proximity to an airfield. An aggressive approach to providing the redevelopment funds necessary to obtain these lands for industrial development is required if this area is to realize its potential for job creation. In addition, adequate provision of public facilities will also be required.

Urban and Rural Boundaries and Transitions

As new urban development is proposed in the eastern portion of the study area, the boundary between general plan designated urban and rural land uses will be realized. Where urban and rural uses create "edge" conditions, as described in the existing setting, land use transitions and buffers will be employed to soften the edges created by these two different land use types.

In general, as differing land use intensities come together, land use transition and buffer areas should be "anchored" along major physical features, such as flood control channels, particularly with channels which can be utilized to leverage recreational open spaces alongside.

Land Use

Another important concept is that the edge of urban development areas be designed so as to respect rural lifestyles and natural open space areas. This consists of development designs which discourage the flow of urban traffic through the rural and open space areas. In addition, the size and design of urban residential parcels along the rural edge should be such that rural residents perceive that the area across the street has a rural character similar to their neighborhood. The transition to smaller lots of urban character should occur within the area designated for urban use beyond, and not immediately at the rural-urban edge.

See the Community Design Appendix for more information regarding the transition of land uses.

General Plan Land Use Districts

Residential Districts:

■ Agricultural/Equestrian [AG/EQ]

General Plan Concept: Areas designated as Agricultural/Equestrian are appropriate for rural and equestrian-oriented residential development. The Agricultural/Equestrian land use category permits and protects the keeping of large animals, as well as the ability of landowners to carry on light agricultural activities.

Maximum Land Use Intensity: 2 du/1.0 ac

■ Low Density [LD]

General Plan Concept: The Low Density category limits land uses to single family detached residential, and mobile homes, subject to applicable General Plan policies and ordinance provisions of the City of Highland.

Within the portion of Highland west of the Foothill Freeway, the development of second units and attached dwelling units behind the primary residential structure is permitted within Low Density areas provided that the maximum density is not exceeded, that infrastructure is available to support such additional dwelling units, and provided that the additional dwellings are architecturally compatible with the primary dwelling unit and the predominant character of the neighborhood.

In addition, within the same portion of the City west of the Foothill Freeway, those second units and attached dwellings which were constructed pursuant to valid permits issued prior to the effective date of this element, should be permitted as being consistent with the General Plan Land Use Element, even if the resulting density of a site would be greater than the maximum allowable land use intensity in this area.

Maximum Land Use Intensity: 6 du/1.0 ac

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■ Medium Density [MD]

General Plan Concept: The areas designated Medium Density are either committed to low intensity multiple family land use, or are required to provide transitions between higher intensity commercial and apartment uses and lower intensity residential and open space uses.

Within the Medium Density category land uses are limited to small lot single family detached residential, attached residential development, and mobile homes subject to applicable General Plan policies and ordinance provisions of the City of Highland.

Maximum Land Use Intensity: 12 du/1.0 ac

■ High Density [HD]

General Plan Concept: Areas designated High Density are areas having good access to major transportation routes, areas that are in close proximity to neighborhood serving commercial facilities, and areas which will not negatively impact low density, single family residential areas.

Within the High Density area, land uses are limited to attached residential, subject to applicable General Plan policies and ordinance provisions of the City of Highland.

Maximum Land Use Intensity: 18 du/1.0 ac

■ Village Residential [VR]

General Plan Concept: Within the Village Residential designated areas, residential structures of historical merit may be preserved to a state which is true to the original era when the structure was built. New construction must respect the significance of the older structures in the district by incorporating similar scale and proportion into new designs.

Within the Historic Village District area, as shown on the land use map and further defined as Village Commercial in Figure II-A-6, land uses are limited to low density residential subject to applicable General Plan policies, Historic District requirements and guidelines, along with applicable ordinance provisions of the City of Highland.

Maximum Land Use Intensity: 6 du/1.0 ac

■ Planned Development [PD]

General Plan Concept: Within the Planned Development designated areas, all residential land uses are considered to be appropriate, as well as support uses (i.e., open space and recreation, public facilities, commercial, and all employment generating uses) that may be appropriate subject to applicable General Plan policies and ordinances of the City of Highland.

Development within areas designated Planned Development are processed through the use of a specific plan pursuant to Government Code Section 65450, a planned unit development, or a similar device.

Land Use

Planned Development areas must be consistent with the provisions of the Highland General Plan. **Planned Development** projects must provide a greater level of community amenities and cohesiveness, achieve superior design, and create a more desirable living environment than could be achieved through conventional subdivision design and requirements.

Maximum Land Use Intensity: The maximum overall intensity of areas designated **Planned Development** shall be consistent with the provisions of the Highland General Plan or determined through the development review process. In all cases, the overall intensity of **Planned Development** areas, and each portion thereof, shall be compatible with adjacent existing and planned land uses.

Commercial Districts:

■ **General Commercial [GC]**

General Plan Concept: The primary purpose of areas designated **General Commercial** is to provide appropriately located areas for the general shopping and commercial service needs of area residents and workers. These include freestanding uses, as well as those within commercial centers of six acres or more.

Within the **General Commercial** designation, and subject to General Plan Policies and ordinance provisions of the City of Highland, appropriate land uses include a broad range of commercial, retail, and service uses. Typical uses include general retail, markets, commercial services, restaurants, automotive repair and service, hardware and home improvement centers, commercial recreation, professional and business offices, financial institutions, and automotive sales.

Maximum Land Use Intensity: Floor Area Ratio of 0.50

■ **Neighborhood Commercial [NC]**

General Plan Concept: The primary purpose of areas designated **Neighborhood Commercial** is to provide appropriately located areas for the daily shopping and commercial service needs of area residents and workers. These areas typically include centers of three to six acres in size.

Within the **Neighborhood Commercial** designation, subject to applicable General Plan policies and ordinance provisions of the City of Highland, appropriate land uses include a range of common retail and personal service uses. Typical uses include markets and drug stores along with supporting uses in a shopping center setting, eating and drinking establishments, automotive service stations, and financial institutions.

Maximum Land Use Intensity: Floor area ratio of 0.50

■ **Base Line Commercial [BC]**

General Plan Concept: The primary purpose of areas designated **Base Line Commercial** is to provide appropriately located areas for the general shopping and commercial service needs of area residents and workers, and to provide a means for upgrading the visual quality and vitality of commercial uses along the Base Line Corridor.

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Within the **Base Line Commercial** designation, subject to applicable General Plan policies and ordinance provisions, appropriate land uses include a broad range of commercial retail and service uses. Typical uses include general retail, markets, commercial services, restaurants, automotive repair and service, hardware and home improvement centers, commercial recreation, professional and business offices, financial institutions, and automotive sales.

The consolidation of individual parcels along Base Line is encouraged in order to provide a sufficient land area for vibrant commercial uses. Access for commercial uses shall be generally limited to Base Line, Del Rosa Drive, Sterling Avenue, Victoria Avenue, Central Avenue, Palm Avenue, Stoney Creek, Boulder Avenue, and Church Avenue so as to minimize traffic impacts on surrounding streets.

Maximum Land Use Intensity: Floor area ratio of 0.75

■ **Planned Commercial [PC]**

General Plan Concept: The primary purpose of **Planned Commercial** areas is to provide a means for the development of mixed use commercial/office projects which recognize the site specific constraints of designated parcels.

Within **Planned Commercial** areas, uses consistent with the General Commercial and Office Professional Categories may be appropriate subject to General Plan policies and ordinance provisions of the City of Highland.

Development within areas designated **Planned Commercial** must be processed through the use of a specific plan pursuant Government Code 65450, as a planned unit development, or a similar mechanism.

Maximum Land Use Intensity: The uses and development intensities within **Planned Commercial** areas must provide appropriate transitions to adjacent land uses, and be consistent with the provisions of the Highland General Plan or subject to development review.

■ **Village Commercial [VC]**

General Plan Concept: The primary purpose of areas designated as **Village Commercial** is to provide for the establishment of commercial and office-related land use types which recognize and are compatible with the historical small town nature of the original Highland Townsite, as well as to preserve architecturally significant residential structures within the village area.

Within the **Historic Village District** area as shown on the land use map and further defined as Village Commercial in Figure II-A-6, subject to applicable General Plan Policies and ordinance provisions of the City of Highland, appropriate land uses include a wide variety of commercial uses, emphasizing specialty retail and office uses. Typical uses include specialty retail (i.e., handcraft shops, art galleries, book stores, curio/antique stores, and flower shops), commercial services, professional and business offices, restaurants, markets (limited to the fringe areas of the village), cultural facilities, financial institutions, vocational and trade schools, and bed and breakfast inns. Residential uses limited to congregate or residential care facilities for senior citizens are also appropriate uses. The village area should emphasize use which contribute to the vitality of the whole, creating pedestrian traffic and interest.

Maximum Land Use Intensity: Floor area ratio of 0.50

■ Office Professional [OP]

General Plan Concept: The primary purpose of areas designated **Office Professional** is to provide areas for the establishment of office based working environments for general professional and administrative offices, as well as necessary support uses.

Within the **Office Professional** designation, subject to applicable General Plan policies and ordinance provisions of the City of Highland, appropriate uses include administrative and professional offices, business related retail service functions (restaurants, health clubs, financial institutions, medical and health care facilities, and vocational and trade schools).

Maximum Land Use Intensity: Floor area ratio of 0.50

■ Business Park [BP]

General Plan Concept: The primary purpose of areas designated **Business Park** is to provide for light industrial, research and development, and office-based firms seeking a pleasant and attractive working environment, as well as for business support services, anchor retail developments, and individual commercial uses requiring a large parcel of land.

Within the **Business Park** designation, subject to applicable General Plan policies and ordinance provisions of the City of Highland, appropriate uses include light manufacturing, wholesaling, and warehousing conducted within an enclosed building; administrative and professional uses; business support uses; eating and drinking establishments; personal services; and retail sales of durable goods, along with general retail sales in areas designated to be retail anchors of a larger business park designated area.

Maximum Land Use Intensity: Floor area ratio of 0.45

Industrial Districts

■ Industrial [I]

General Plan Concept: The primary purpose of areas designated **Industrial** is to provide for light industrial, research and development, and office-based firms seeking an attractive a pleasant working environment and a prestigious location.

Within the **Industrial** areas, subject to applicable General Plan policies and ordinance provisions of the City of Highland, appropriate uses include those uses which can be made compatible with other uses within Highland in terms of generation of noise, dust, odors, vibration, glare, air pollutant emissions, traffic generation and transportation, storage use, and the creation of hazardous materials. Typical uses include light manufacturing and assembly, small scale warehousing and distribution, and research and development. In addition, administrative offices supporting the primary industrial use of the property may be permitted.

Maximum Land Use Intensity: Floor area ratio of 0.45

Special Districts:

■ Civic Center [CC]

General Plan Concept: The primary purpose of the **Civic Center** designation is to provide for the construction of public and institution uses intermixed with retail commercial and office activities in a mixed use context. The intent of this designation is to allow for the creation of incentives which promote the possibility of private investment and/or a public/private development venture which would lead to the establishment of a civic center complex. It is anticipated that all proposed development would be consistent with an overall development plan which would include comprehensive development guidelines for the area (see the Concepts, Options, and Alternatives section of the Land Use Element).

Within the areas designated as **Civic Center**, subject to applicable General Plan policies and ordinance provisions of the City of Highland, appropriate uses include all uses within the **Public/Institutional** designation in addition to retail commercial and office uses which support the above listed activities, senior residential uses and related senior service uses, social service agencies, and both public and private open space and recreation uses.

■ Public/Institutional [P]

General Plan Concept: The primary purpose of lands designated as **Public/Institutional** is to provide areas for the construction of public and institutional activities including, but not limited to, local State and Federal agencies, special districts, public and private utilities, and regional institutions.

Within areas designated as **Public/Institutional**, subject to applicable General Plan policies and ordinance provisions of the City of Highland, appropriate uses include City facilities public and private schools, fire stations, parks, hospitals, libraries, post offices, and other public, quasi-public, and institutional uses.

Maximum Land Use Intensity: Floor area ratio of 1.0

Open Space Uses:

■ Open Space [OS]

General Plan Concept: The primary purpose of lands designated **Open Space** is the provision of recreational facilities, utility corridors, water conservation facilities, preservation of environment values, managed production of resources, and protection of public safety.

Within areas designated **Open Space**, only uses consistent with the provision of recreation and community/cultural activities, and which are consistent with the protection of the public health and safety may be considered appropriate subject to applicable General Plan policies and ordinance provisions of the City of Highland.

Maximum Land Use Intensity: The maximum land use intensity of **Open Space** lands is governed by the open space purpose of the land so designated. These areas are not intended for urban or rural development.

Community Character and Design

Community Image

Community character concepts center on defining the intangible sense of place and well-being which people perceive and desire in their community, and translating that sense into tangible ideas which can be incorporated into the built environment. The City of Highland portrays the character of a quiet suburban bedroom community, nestled in a picturesque mountainous backdrop.

Although it is unlikely that Highland can remain physically all residential, the central community character premise of the Highland General Plan is to retain the *character* and *desirable qualities* of a traditional bedroom community, even if the City of Highland will not, in fact, *be* a bedroom community.

Within the General Plan study area, several specific features combine to create the area's character. Preservation of existing features which define community character and incorporation of the following features, where feasible, into future development within the General Plan study area is encouraged:

- a well-defined community which is separate and distinct from surrounding jurisdictions;
- elimination of conflicts between adjacent uses and the provision of clear buffers and transitions between dissimilar uses;
- views of the San Bernardino Mountains, and natural river channels which define the extent of urban development;
- preservation of natural foothill areas and limitation of development within such areas to that which is consistent with their natural *character*;
- preservation of significant environmental features, and incorporation of open spaces into the fabric of new developments;
- preservation and rehabilitation of significant community features such as the Historic Highland Townsite;
- a generally low-profile form of development;
- architectural variety without visual chaos;
- a clean, uncluttered look within commercial areas;
- provision of gathering, meeting, and recreational places;
- availability of nearby commercial services, such as financial institutions and restaurants;

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- design of commercial facilities which facilitate rather than hinder pedestrian circulation within the center, as well as between the center and adjacent residential neighborhoods;
- development designs which are structured so as to be easy for newcomers to find their way, and which become familiar, friendly places for long-time residents; and
- development designs which enhance a feeling of being safe.

The identification of individual neighborhood areas can also enhance the sense of place which local residents may feel about their community. However, when used as simply a temporary marketing tool for the initial sales of a development, such a concept lacks the sense of neighborhood permanence Highland desires to create.

After the initial new sales program, permanent identification of individual neighborhoods designed to be distinctive, yet understated in their design, can provide a sense of neighborhood identity. The use of landscape, fencing designs and enhanced pedestrian treatments at minor or secondary entrance points is encouraged over large, overstated entry monuments.

Major entry points should be used only at entrances to a group of neighborhoods or at an identifiable district or master planned area. Such entrances in non-private projects should be designed to give a sense of arrival and/or reinforce neighborhood themes, yet not give the appearance of a "walled" or "gated" community.

Development of a community signing scheme for street corridors, public buildings and selected entrances to the community and its subcommunities would help promote civic pride and identify the City boundaries. It may also be possible to integrate such programs with County efforts to improve outlying unincorporated community areas and County recreational amenities. Community involvement through "Adopt a Sign" programs may also be a way in which the business community could participate in improving the aesthetics of the community.

Regional Cooperation and Coordination

The City of Highland will work to achieve regular and effective lines of communications, with those local, regional, state, and federal agencies whose efforts will positively or negatively affect Highland residents and businesses. The primary objective of this communication would be to:

- identify opportunities for joint programs to further common interests in a cost efficient manner;
- assist agencies in understanding each other's interests and concerns; and
- resolve differences in the interests and concerns which the City of Highland might have with the actions of another agency, as well as those concerns which another agency might have with actions of the City of Highland.

City Boundaries

Because the City cannot rely on individual property owner and resident requests as a means of squaring off and achieving logical municipal boundaries, a more proactive role needs to be taken. This role will consist of the City taking the lead in annexing unincorporated lands for which the following findings can be made:

- Clear compatibility exists with Highland's basic identity and the goals and desires of area residents and landowners.
- The proposed annexation is consistent with the goals and concepts outlined in the General Plan, particularly in regard to management of existing resources and provision of services.
- Significant benefits will be derived by the City and the affected owners/residents upon annexation.
- There exists a significant social and economic interdependence and interaction between the City of Highland and the area proposed for annexation.

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 1: Maintain a mix of land uses which enhances the quality of life of Highland residents.					
<i>Objective 1.1: Create opportunities for a diverse population to interact, exchange ideas, and establish and realize common goals as a unified community.</i>					
1.1.1	Retain and provide a hierarchy of community social gathering places, including park lands, a community center, and plaza areas within new commercial, office, and industrial complexes.	Ongoing	Enhancement of existing project review process	Community Development	Department Budget and Development Review Fees
1.1.2	In conjunction with area schools, chamber of commerce, and service clubs, facilitate multi-cultural programs and/or a community cultural festival.	Investigate program feasibility by 18 months post General Plan adoption	New Program	Community Development and General Governmental Services	Department Budget and Community Service Organizations
1.1.3	Within new residential developments, encourage organization of neighborhoods into smaller units and discourage non-local through traffic on local streets.	Ongoing	Enhancement of existing development review process	Community Development	Department Budget and Development Review Fees
<i>Objective 1.2: Protect existing residential neighborhoods and provide a variety of urban and rural housing opportunities, which are adequate to meet the City's share of regional housing needs.</i>					
1.2.1	Maintain the integrity of existing residential neighborhoods by preventing through traffic wherever possible, prohibiting encroachment by incompatible uses, and providing appropriate buffers between residential and non-residential uses, as well as between single and multiple family areas.	Ongoing	Enhancement of existing development review process	Community Development	Department Budget and Development Review Fees
1.2.2	Where conversion of a residential area to non-residential uses is proposed, ensure that such conversion occurs in an orderly manner with minimal disruption.	Ongoing	Enhancement of existing development review process	Community Development	Department Budget and Development Review Fees
1.2.3	Initiate rehabilitation programs to visually improve older areas of the community and to improve the quality of life.	Start program after obtaining CDBG entitlement status	New Program	Community Development	CDBG and Redevelopment Funds

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.2.4	Ensure that the relationship between the size of a house and the size of the lot it is located on is such that adequate yard space for family recreational activities is provided and that an uncrowded look is maintained along the street.	Ongoing	Enhancement of existing development review process	Community Development	Department Budget and Development Review Fees
1.2.5	Maintain residential areas which provide for and protect rural lifestyles, and protect natural resources and hillsides in the rural portions of the planning area.	Ongoing	Enhancement of existing development review process	Community Development	Department Budget
1.2.5.a)	Identify areas appropriate for rural and equestrian-oriented residential development, and designate them as <u>Agricultural/Equestrian</u> on the Highland General Plan Land Use Map and as described in the Concepts section of the Land Use Element.	General Plan adoption - Ongoing	Land use designations take effect upon adoption of the General Plan	Community Development	Department Budget
1.2.5.b)	Within the Greenspot Sphere, utilize lower densities to protect agricultural lands, scenic resources, and topographic features.	Post General Plan adoption	Land use designations take effect upon adoption of the General Plan	Community Development	Department Budget
1.2.5.c)	Preserve agricultural lands within the Greenspot Sphere as commercial operations if possible, or within residential developments if not. Utilize Planned Developments with joint ownership or agricultural uses or placement of low density housing within an overall grove setting.	Ongoing	To be implemented as agricultural lands transition to urban uses	Community Development	Department Budget
1.2.6	Maintain residential areas which provide for a suburban lifestyle, including ownership of single family housing.	General Plan adoption	New Program	Community Development	Department Budget
1.2.6.a)	Designate the majority of Highland's residential areas, other than rural or Planned Development areas as <u>Low Density</u> on the Highland General Plan Land Use Map and as described in the Concepts section of the Land Use Element.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.2.7	Broaden the range of, and encourage innovation in, available housing types, and provide housing for those not desiring dwellings on individual parcels, those desiring a mobilehome lifestyle, as well as for those desiring amenities not generally found in standard subdivisions, such as common open space and recreational areas.	Ongoing	New Program	Community Development	Department Budget
1.2.7.a)	Designate areas as <u>Medium Density</u> which are either committed to low intensity multiple family use, or are required to provide transitions between higher intensity commercial and apartment uses and lower intensity residential and open space uses.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.2.7.b)	Require developments within Medium Density areas to provide amenities not generally found in typical suburban community subdivisions, such as common open space and recreational areas.	Ongoing	New Program	Community Development	Department Budget and Development Review Fees
1.2.7.c)	Designate areas having good access to major transportation routes, which are in close proximity to neighborhood serving commercial facilities, and which will not negatively impact low density, single family residential areas as <u>High Density</u> .	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.2.8	Continue the innovative use of land resources and development of a variety of housing types and sizes within the City by recognizing a <u>Planned Development</u> designation.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.2.8.a)	Require that development within areas designated Planned Development be through use of a specific plan pursuant to Government Code Section 65450, a planned unit development, or similar mechanism.	Ongoing	Enhancement of existing program	Community Development	Department Budget
1.2.8.b)	Ensure that development intensities within Planned Development areas are consistent with the provisions of the Highland General Plan.	Ongoing	New Program	Community Development	Department Budget

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Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
1.2.8.c)	Require that Planned Development projects provide a greater level of community amenities and cohesiveness, achieve superior design, and create a more desirable living environment than could be achieved through conventional subdivision design and requirements.	Ongoing	Enhancement of existing program	Community Development	Department Budget
1.2.9	Where consistent with the other provisions of the Highland General Plan, encourage provision of low and moderate cost housing, as well as for the provision of housing for other identified special housing needs groups.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, CDBG Funds Redevelopment Funds as available
1.2.9.a)	Review the zoning and subdivision codes and include clear incentives for the provision of housing to meet the needs identified above, including, but not limited to, density bonuses of up to 25 percent over the densities indicated in the Land Use Element.	Review Ordinance 8 months post General Plan adoption	New Program	Community Development	Department Budget, CDBG Funds Redevelopment Funds as available
Objective 1.3: Provide lands for retail and service commercial, professional services, and office-based employment-generating uses in sufficient quantity to meet the needs of Highland residents.					
1.3.1	Maintain existing sales tax generating areas and, where consistent with other provisions of the General Plan, intensify the sales tax-generating potential of commercial areas along the Base Line corridor, at freeway interchanges, and at major intersections.	Ongoing	New Program	Community Development	Department Budget
1.3.2	Consistent with maintaining an image of the City of Highland as a quality residential community, reserve vacant lands at heavily traveled locations which are not appropriate for residential use for commercial, office, or other nonresidential uses.	Ongoing	New Program	Community Development	Department Budget
1.3.3	Discourage strip commercial development by encouraging lot consolidation within existing commercial strips and by limiting commercial designations to areas of sufficient size to accommodate larger scale, quality development.	Ongoing	New Program	Community Development	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.3.4	Establish minimum increments for the design of commercial development, permitting individual commercial lots to be developed while ensuring that the benefits of larger scale, high quality developments are realized.	Establish minimum requirements as part of Ordinance revision - 8 months post General Plan adoption	New Program	Community Development	Department Budget
1.3.5	Provide areas designated <u>General Commercial</u> on the Highland General Plan Land Use Map and as described in the Concepts section of the Land Use Element to provide appropriately located areas for the general shopping and commercial service needs of area residents and workers. These include both freestanding uses, as well as uses within commercial centers of six acres or more.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.3.6	Designate areas for <u>Neighborhood Commercial</u> on the Highland General Plan Land Use Map and as described in the Concept Section of the Land Use Element to provide appropriately located areas for the daily shopping and commercial service needs of area residents and workers. These areas typically include centers of three to six acres in size.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.3.7	Designate areas for <u>Base Line Commercial</u> on the Highland General Plan Land Use Map and as described in the Concepts section of the Land Use Element to provide appropriately located areas for the general shopping and commercial service needs of area residents and workers, and to provide a means for upgrading the visual quality and vitality of commercial uses along the corridor.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.3.7.a)	Specifically encourage the consolidation of individual parcels along Base Line in order to provide a sufficient land area for vibrant commercial uses.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.3.7.b)	Where feasible, designate existing residential parcels along the rear of commercial uses along Base Line as Base Line Commercial.	Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	(1) Prohibit the development of parcels not fronting on Base Line for commercial use except as part of an integrated commercial project which will take its access from, and focus on Base Line. (2) Limit new access for commercial uses to Base Line, Del Rosa Drive, Sterling Avenue, Victoria Avenue, Central Avenue, Palm Avenue, Stoney Creek, Boulder Avenue, and Church Avenue. (3) Facilitate conversion of existing residential parcels along the rear of commercial uses along Base Line on a block-by-block, rather than on a parcel-by-parcel basis.				
1.3.8	Designate areas for <u>Planned Commercial</u> uses to provide a means for the development of mixed use commercial/office projects which recognize the site specific constraints of designated parcels.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.3.8.a)	Require that development within areas designated Planned Commercial be through use of a specific plan pursuant to Government Code Section 65450, a planned unit development, conditional use permit, or similar mechanism.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
1.3.8.b)	Ensure that uses and development intensities within Planned Commercial areas provide appropriate transitions to adjacent land uses, and are consistent with the provisions of the Highland General Plan.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
1.3.9	Designate areas for <u>Village Commercial</u> on the Highland General Plan Land Use Map and as described in the Concepts section of the Land Use Element is to provide for the establishment of commercial and office-related land use types which recognize and are compatible with the historical, small town nature of the original Highland townsite, as well as to preserve architecturally significant residential structures within the village area.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.3.9.a)	Prohibit freestanding drive-through commercial structures and convenience commercial uses.	Ongoing	New Program	Community Development	Department Budget
1.3.9.b)	Establish a clear preservation plan for the Village area, along with a historic preservation ordinance, if necessary.	Establish plan 18 months post General Plan adoption	New Program	Community Development	Department Budget, CDBG Funds Redevelopment Funds as available
Objective 1.4: Promote a mix of attractive employment-generating areas with a mix of uses which provide a sound and diversified economic base and which are compatible with the community's overall residential character.					
1.4.1	Permit new mineral extraction areas and expansion of existing operations only where the following findings can be made: - Potential significant impacts related to loss of significant biological resources have been mitigated to an acceptable level, as have potential significant impacts of noise, air pollutant emissions, dust, and hazardous materials; significant impacts will not be created on lands used or planned for residential use, and the public health and safety will be protected. - Haul routes have been identified, and will be utilized, which will not create significant impacts within residential areas, and which will not negatively impact access into commercial/industrial areas. - The municipal revenue-generating characteristics of the proposed operation are such that a positive fiscal benefit will accrue to the City of Highland and to its residents. The analysis of fiscal benefits shall account for the incremental capital and maintenance costs for the area circulation system created by the high intensity of truck use associated with the operation.	Ongoing	New Program	Community Development	Department Budget, Development Fees

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.4.2	Designate areas for <u>Office Professional</u> uses on the Highland General Plan Land Use Map and as described in the Concepts section of the Land Use Element to provide areas for the establishment of office-based working environments for general, professional and administrative offices, as well as necessary support uses.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget, Development Fees
1.4.3	Designate areas for <u>Business Park</u> uses on the Highland General Plan Land Use Map as described in the Concepts section of the Land Use Element to provide for light industrial, research and development, and office-based firms seeking a pleasant and attractive working environment, as well as for business support services, and commercial uses requiring extensive land areas.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.4.4	Designate areas for <u>Industrial</u> uses to provide for light industrial, research and development, and office-based firms seeking an attractive and pleasant working environment and a prestige location.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
Objective 1.5: Maintain adequate land for educational, cultural, recreational, and public service activities to meet the needs of Highland residents.					
1.5.1	Designate areas for <u>Public/Institutional</u> uses to provide for the conduct of public and institutional activities, including but not necessarily limited to local, State, and federal agencies; special districts; public and private utilities; and religious institutions.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.5.2	Where compatible with surrounding land uses and consistent with the provisions of the Highland General Plan, permit public, quasi-public, and institutional uses within other land use designations shown on the General Plan Land Use Element Map.	Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding	
Objective 1.6: Encourage open space preservation through appropriate land use policies that recognize valuable natural resources, and areas required for the protection of public health and safety.					
1.6.1	Designate areas for <u>Open Space</u> on the Highland General Plan Land Use Element map as described in the Concepts section of the Land Use Element to provide for recreational facilities, preservation of scenic and environmental values, managed production of resources (agriculture, water reclamation and conservation, mineral extraction), and protection of public safety.	General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.6.2	Promote joint development and use of parks and open space facilities with adjacent jurisdictions; promote development of joint school/park sites.	Ongoing	New Program	Community Development	Department Budget
Objective 1.7: Maintain a positive community image.					
1.7.1	Investigate the initiation of the following rehabilitation programs for older commercial and residential areas: • Provide for the improvement of infrastructure in older portions of the City by using the Public Facilities and Services Assessment and Reporting System as a means of programming such improvements into the City's Capital Improvement Program. • Promote infill development within existing neighborhoods by preparing infill development guidelines which preserve the character of the neighborhood. • Using the concepts described in the Land Use Element, develop and implement a Community Structure and Image Enhancement Program.	Complete investigation within 36 months post General Plan adoption	New Program	Public Works, Community Development, Redevelopment Agency	Department Budget, CDBG Funds, Redevelopment Funds
1.7.2	Initiate the development of a series of corridor studies which address the following areas: • Base Line from the western city limits to Church Street. • Boulder Avenue from Fifth Street to the 30 Freeway. • State Route 30 corridor.	Initiate study 24 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget, CDBG Funds, Redevelopment Funds

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.7.3	Require specialized landscape and design treatments along the Base Line, Route 30, and Boulder corridors, as well as at other gateways to the City.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.7.3.a)	Work with Caltrans to establish a program for landscaping the freeway corridor.	Initiate contact 6 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget
1.7.3.b)	Consider participating in a Joint Power Agreement with Caltrans as a measure to encourage landscape beautification of the freeway corridor.	Initiate contact 24 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget
1.7.4	Establish clear definitions for "quality development" based on the design concepts discussed in the Land Use Concepts section of the Highland General Plan; establish clear requirements for the design of individual projects within the City of Highland.	Ongoing	New Program	Community Development	Department Budget
1.7.5	Require reclamation of existing and future mineral extraction areas (see also Open Space and Conservation Element).	Develop policy & implementation program 24 months post General Plan adoption	New Program	Community Development	Department Budget
Goal 2: Management of land use with respect to location, density, and intensity, in order to maintain consistency with the capabilities of the City and special districts to provide essential services, and to achieve sustainable use of available resources.					
Objective 2.1: Maintain an organized pattern of land use which minimizes conflicts between adjacent land uses.					
2.1.1	Require that new developments be at an appropriate density or intensity based upon compatibility with surrounding existing and planned land uses.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
2.1.2	Ensure that effective buffer areas are created between uses having significantly different intensities or having operating characteristics which could create nuisances along a common boundary; ensure that individual site designs and operations avoid the creation of nuisances and hazards for either use.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
2.1.3	Where a question of compatibility exists, and concepts described in the General Plan are inappropriate, require the new use to conform to the lower intensity use.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
2.1.4	Ensure that residential infill development respects the design character of the surrounding neighborhood by balancing the provision of density incentives with appropriate design concepts.	Post General Plan adoption	New Program	Community Development	Department Budgets, Development Review Fees
Objective 2.2: Ensure that future development occurs consistent with the ability of agencies to provide adequate public services and facilities.					
2.2.1	Through adherence to the California Environmental Quality Act and development review processes, ensure that adequate services and facilities are available to support each phase of a proposed development.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
2.2.2	Require new development to pay for the facilities needed to serve proposed uses.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
2.2.3	Pursue a variety of funding mechanisms in addition to developer fees and construction by developers, including tax increment financing, Mello-Roos Districts, and benefit-assessment districts.	Ongoing	Existing Program	Community Development, Public Works, Redevelopment Agency	Department Budget, Redevelopment Funds
Objective 2.3: Incorporate public health, safety, and welfare considerations in regard to natural hazards into land use and development decisions.					
2.3.1	Through the CEQA and development review processes, ensure that new developments are adequately protected from potential hazards, and will not exacerbate existing hazards or create new hazards for existing or future Highland residents or businesses.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
2.3.2	Restrict higher intensity uses in areas subject to flooding, seismic hazards, airport safety hazards and wildland fires through the implementation of the policies contained in the Public Health and Safety Element.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
2.3.3	Adopt an overlay zone to guide the development of properties subject to Federal Aviation Regulations as well as State law and airport planning guidelines.	Participate in the Norton AFB reuse planning, which will establish guidelines for overflight area	New Program	Community Development	Department Budget
2.3.4	Maintain participation in the National Flood Insurance Program.	Ongoing	Existing Program	Community Development, Public Works	Department Budget
<i>Objective 2.4: Promote land use patterns and intensities which are sensitive to land, plant and animal, water, energy, and air resources.</i>					
2.4.1	Ensure that planning programs and individual development projects are sensitive to environmental resource limitations.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
2.4.1.a)	Prior to approving new development, ensure that the environmental consequences of the proposed action have been identified, and that appropriate mitigation for potential impacts has been provided.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
2.4.2	Ensure that new development reduces energy and water consumption, and generation of solid and hazardous wastes and air and water pollutant emissions to the extent feasible.	Ongoing	New Program	Community Development	Department Budget, Development Fees
2.4.3	Protect the visual quality and character of remaining natural areas, and ensure that hillside development not create unsound or unsafe conditions by incorporating the design guidelines contained in the Community Design Appendix in the City's project review process.	Ongoing	New Program	Community Development	Department Budget, Development Fees
2.4.4	Ensure that development in areas needed for groundwater recharge areas is consistent with that need and with policies contained in the Open Space and Conservation Element.	Ongoing	New Program	Community Development	Department Budget, Development Fees

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
Goal 3: Achievement of a regional perspective in land use decisions affecting the residents of Highland.				
Objective 3.1: Coordinate land use planning programs between local, regional, State, and federal jurisdictions.				
3.1.1	Notify neighboring jurisdictions when considering changes to the City's existing land use pattern adjacent to City boundaries.	Ongoing	New Program	Community Development Department Budget
3.1.2	Cooperate with neighboring jurisdictions through review and comment on proposed changes to existing land use patterns which might affect the City of Highland.	Ongoing	New Program	Community Development Department Budget
3.1.3	Establish regular lines of communication with local, regional, State, and federal agencies whose planning programs may affect Highland residents and businesses.	Establish list of agencies and regular lines of communication 6 months post General Plan adoption	New Program	Community Development Department Budget
Objective 3.2: Establish and maintain logical City boundaries which reflect existing service capabilities, social and economic interdependencies, citizen desires, and City costs and revenues.				
3.2.1	Work with LAFCO, the City and County of San Bernardino, and area residents to promote the establishment of better defined boundaries which would facilitate more efficient provision of municipal services and an economically viable community.	Ongoing	Enhancement of Existing Program	Community Development Department Budget
3.2.2	Pursue a review of the easterly sphere of influence boundaries.	Review and report findings within 6 months post General Plan adoption	New Program	Community Development Department Budget
3.2.3	Pursue annexation of the entire original Highland townsite in the City of Highland.	Report on feasibility within 18 months of General Plan adoption - then Ongoing	New Program	Community Development Department Budget
3.2.4	Pursue annexation of such areas where the following findings can be made: • The proposed annexation is consistent with goals and objectives of the General Plan;	Ongoing	New Program	Community Development, City Council Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
- Significant benefits will be derived by the City and affected property owners/residents upon annexation; - There exists a significant social and economic interdependence and interaction between the City of Highland and the area proposed for annexation.					
Goal 4: Maintain recognition both within Highland and the region as being a community with a well planned and aesthetically pleasing physical environment.					
Objective 4.1: Create visual points of reference, both within the community and on its boundaries as a means of establishing community identity and resisting being engulfed by the urban tide.					
4.1.1	Develop City entry monuments at community gateway as identified in the Community Structure section of the Land Use Element.	Establish design as part of Strategy 1.7.1.c and 1.7.2	New Program	Community Development, Public Works	Department Budget, CDBG Funds Redevelopment Funds
4.1.2	Where feasible and appropriate, construct landscaped median islands within the primary arterial roadway system both as a means of traffic control and as an aesthetic feature for the community.	Set priority and implement as part of annual CIP process	New Program	Community Development, Public Works	CIP Funds, Redevelopment Improvement Districts
4.1.3	Encourage the provision of neighborhood identification signage, including provisions for their long-term maintenance.	Establish program as part of Strategy 1.7.1.c and 1.7.2	New Program	Community Development	Department Budget, Private Funds
4.1.4	Pursue the establishment and expansion of landscape maintenance districts as a means of ensuring the ongoing maintenance of medians and community entry statements, as well as maintenance of landscaping of hillsides along major roadways.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget to establish landscape district funds
4.1.4.a)	Ensure that the costs associated with such maintenance districts equitably share the benefits which accrue to the adjacent property owner and residents throughout a development.	Ongoing	Existing Program	Community Development, Public Works	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Objective 4.2: Ensure that all development and intensification of existing development yields a pleasant living, working, or shopping environment, and attracts the interest of residents, workers, shoppers, and visitors as the result of consistent exemplary design.					
4.2.1	Require that development adhere to the design guidelines contained within the Community Design Appendix.	Ongoing	New Program	Community Development	Department Budget, Development Fees
4.2.2	Adopt restrictions for offsite advertising.	Adopt within 8 months of General Plan adoption	New Program	Community Development	Department Budget
4.2.3	In conjunction with area utilities, continue to pursue the undergrounding of overhead utility lines.	Ongoing	Existing Program	Community Development	Department Budget
4.2.3.a)	Investigate the feasibility of working with the phone companies for installation of fiber optics.	Set up periodic meetings to assess feasibility	New Program	Community Development	Department Budget
Objective 4.3: Protect the visual quality and character of remaining natural areas, and ensure that hillside development not create unsound or unsafe conditions.					
4.3.1	Emphasize the retention of the natural environment over its conversion to urban forms.	Ongoing	New Program	Community Development	Department Budget
4.3.2	Using the concepts described in the Community Design Appendix, adopt hillside development regulations as part of the development code.	Adopt regulations in new code within 8 months post General Plan adoption	New Program	Community Development	Department Budget
Goal 5: Protect and enhance architectural, and historical resources located within the City of Highland which evoke distinctive stages of the City's history so that such resources might be part of the consciousness of present and future generations. This consciousness will build pride in Highland's unique qualities by fostering citizen efforts to preserve and enhance historical resources.					
Objective 5.1: To raise community awareness regarding the history and architecture of the City and its physical development and educate the public to the significance of historic areas, sites and structures and the social events associated with them.					
5.1.1	Develop a booklet geared toward homeowners who want more information on how to rehabilitate, research and appreciate their historic property. This booklet would be geared entirely toward the specific styles, building parameters and local resources available to the property owner in Highland.	Develop booklet 18 months post General Plan adoption	New Program	Community Development	Department Budget and Historic Committee volunteers

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
5.1.2	Utilize to the greatest extent possible ComCast and Southland Cablevision to produce programming which will educate the community on the cultural and architectural history of Highland.	Ongoing	New Program	Community Development, City Managers Office	Department Budget
5.1.3	Work with and through the Highland Historians to promote the importance of history and the preservation of the Highland District.	Ongoing	New Program	Community Development	Department Budget and Historic Committee volunteers
5.1.4	Coordinate with the local library to establish a technical preservation resource library on restoration and preservation techniques, as well as the local history of Highland. In particular, this should include resources remaining from the Historic Survey which will help residents research the history of their own home. This special component of the library should also include an expanding group of specially acquired publications geared toward home restoration.	Initiate coordination 36 months post General Plan adoption	New Program	Community Development	Department Budget
5.1.5	Create and implement special events which recognize the Highland Historic District and programs which protect it.	Ongoing	New Program	Community Development and various community groups	Department Budget and private volunteer sources
5.1.6	Create a Walking Tour Brochure so that information on the history of the buildings and homes can be appreciated by residents and visitors.	Create and make brochure available 24 months post General Plan adoption	New Program	Community Development and Local Historic Society	Department Budget and private volunteers
5.1.7	Develop a local historic register program which recognizes landmark homes and buildings in Highland.	Develop program within 12 months post General Plan adoption	New Program	Community Development and Local Historic Society	Department Budget and private volunteers
Objective 5.2: To encourage the reuse and renovation of historical structures throughout the City so that they may be part of the consciousness of present and future generations.					
5.2.1	Establish a program of low-interest rehabilitation loans using HCD Block Grant funds in combination with the cooperation of private lending institutions, low-interest loans will be issued on the basis of financial need, as well as the need for historic preservation.	Establish program 24 months post General Plan adoption	New Program	Community Development	CDBG as funds become available, private lending sources

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
5.2.2	Adopt a special Historic Building Code to assist both the City Building Division and property owners with a more lenient approach to rehabilitation of older structures which will ensure that health and safety goals are met.	Adopt within 24 months post General Plan adoption	New Program	Community Development	Department Budget, CDBG as funds become available
5.2.3	Notify and assist property owners whose buildings appear to be eligible for the National Register based on the findings of the Historic Survey. If listed on the National Register, these property owners are eligible for special income tax benefits relative to the cost of rehabilitation.	See Strategy 5.2.2	New Program	Community Development	Department Budget, CDBG as funds become available
5.2.4	Allocate special staff from both the Building and Planning Divisions to the creation and implementation of the programs listed in strategies 1 through 3, above. Representatives of each department should have special expertise and interest in the historic architecture and preservation opportunities that exist within the Historic District.	See Strategies 5.2.1 through 5.2.3	New Program	Community Development	Department Budget, CDBG as funds become available
Objective 5.3: Ensure compatibility of land uses in future development of the Historic District.					
5.3.1	Establish a Village Residential land use designation. The primary purpose for areas designated on the Highland General Plan Land Use Map is to provide for the establishment of residential related land use types which recognize and are compatible with the historical, small town nature of the original Highland townsite, as well as to preserve architecturally significant residential structures within the village area.	General Plan adoption	New Program	Community Development, City Council	Department Budget
5.3.1.a)	Designate the Historic District's residential area as Village Residential on the Highland General Plan Land Use Map.	General Plan adoption	New Program	Community Development, City Council	Department Budget
5.3.1.b)	Within the Village Residential category, limit land uses to single family detached residential, subject to applicable General Plan policies and Highland ordinance provisions.	Ongoing	New Program	Community Development	Department Budget
5.3.1.c)	Maintain a maximum density within the Village Residential area of up to six dwelling units per gross acre (6 du/ac).	Ongoing	New Program	Community Development	Department Budget

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Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
5.3.1.d)	Permit the development of second units and attached dwellings behind the primary residential structure, provided parking and infrastructure is available to support additional dwelling units, and that the units are architecturally compatible with the primary dwelling unit and the predominant character of the neighborhood.	Ongoing	New Program	Community Development	Department Budget
5.3.2	Establish a Village Commercial land use designation (see Figure II-A-6). The primary purpose of areas designated on the Highland General Plan Land Use Map is to provide for the establishment of commercial and office-related land use types which recognize and are compatible with the historical, small town nature of the original Highland townsite.	General Plan adoption	New Program	Community Development, City Council	Department Budget
5.3.2.a)	Within the Village Commercial designation as shown on the land use map, and subject to applicable General Plan policies and Highland ordinance provisions, appropriate land uses include a wide variety of commercial uses, emphasizing specialty retail and offices. Typical uses include specialty retail (handicraft shops, art galleries, book stores, curio/antique stores, flower shops), commercial services, professional and business offices, restaurants, markets (limited to the fringe areas of the village), cultural facilities, financial institutions, vocational and trade schools, and bed and breakfast inns. Residential uses, including single-family as well as congregate or residential care facilities for senior citizens are also appropriate.	Ongoing	New Program	Community Development	Department Budget
5.3.2.b)	Within the Village area, emphasize uses which contribute to the vitality of the whole, creating pedestrian traffic and interest.	Ongoing	New Program	Community Development	Department Budget
5.3.2.c)	Prohibit freestanding drive-through commercial structures and convenience commercial uses.	Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
5.3.2.d)	Maintain a maximum floor area ratio within Village Commercial areas of 1.0, provided parking and infrastructure is available, and that the development is architecturally compatible with the predominant character of the area.	Ongoing	New Program	Community Development	Department Budget
Objective 5.4: Ensure renovation of existing buildings and construction of new buildings that will harmonize with the existing buildings and the visual image of the entire district.					
5.4.1	Design new buildings in such a way as to reflect the architectural components and spirit of detailing on existing buildings in the historic district.	Ongoing	New Program	Community Development	Department Budget
5.4.2	Establish provisions that control demolition, guidelines for new and rehabilitation construction, and use regulations to protect the architectural character and economic vitality of the Historic District.	Establish provisions as part of code review in Strategy 5.2.2	New Program	Community Development	Department Budget
5.4.3	Use the following general guidelines, along with those discussed in the Historic section of the Community Design Appendix when reviewing new construction and the renovation and/or preservation of structures within the Highland Historic District: - The height of new structures must be similar to other buildings in the surrounding area. - Details for new structures must be similar to the prevailing setbacks. - The relation between the height and width of the front elevation of a structure must be similar to that of other buildings in the surrounding area. - The recurrent alternations of solids and voids (walls to windows and doors) must be similar to other buildings in the surrounding area. - Roof type and materials must be compatible with existing buildings in the surrounding area. - Surface textures and colors shall be appropriate in the context of other buildings in the surrounding area.	Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	• New buildings shall observe an appropriate spacing in terms of the surrounding area. • The design of new buildings and alterations must take into account for the presence or absence of such projections as porches, awnings, and overhangs on other buildings within the surrounding areas. • Architectural details of new and renovated buildings must be suggestive of the extent and scale of detail on other buildings in the surrounding area.				

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CIRCULATION

Introduction

Purpose and Function

The purpose and function of the Circulation Element is to guide the City of Highland in establishing standards and making decisions regarding circulation and land use. It brings forth issues, opportunities, goals, objectives, strategies, and implementation plans concerning the circulation and transportation facilities and programs that will be necessary to support development of the uses proposed in the Land Use Element. A Circulation Element must also take into account that increasing populations, energy shortages, and continued degradation of air quality are producing profound changes in how we view both transportation requirements and land development patterns. A transportation network must be created which balances traffic facility capacities with demands created by the population and proposed land use distribution. This element also focuses on the relationship of the City of Highland to surrounding cities and the County. It has taken into consideration the utilization of smooth transitions from one roadway section to another of San Bernardino County, City of Redlands and City of San Bernardino.

Goals Summary

Goal 1

To provide for a balanced transportation system that meets the needs of current and future residents and ensures the safe and efficient movements of vehicles, people, and goods throughout the City.

Goal 2

Develop and maintain a transportation system which maximizes freedom of movement and balances concerns for mobility, safety, and the quality of the City's living environment.

Circulation

Existing Setting

Roadways

The major portion of the circulation system for the recently incorporated City of Highland developed over a number of years. As a result, circulation problems which existed in the system upon incorporation have been inherited by the City. The network of roads has been primarily developed as a grid system. Due to the maturity and physical constraints of the study area, the grid becomes discontinuous in some locations, and limits the range of available solutions.

Regional and interregional access for the City of Highland is provided by a system of freeways, highways and local arterials. Foothill Freeway provides local access to Interstate 215 which provides access to Riverside, San Diego and connection to the San Bernardino Freeway with access to Los Angeles and the desert communities to the east. The Foothill Freeway corridor, when completed, will provide full freeway service between Highland, Redlands to the south, and the foothill communities to the west. State Route 330 provides access to the mountain areas north of the City. When Highland's freeway system is complete, the ease of access will help identify the City as a center for residential and economic growth.

There is much in fill development potential throughout the City, as well as new development potential in the eastern portion of Highland. Due to natural barriers (e.g., rivers, creeks, mountains) and man-made barriers (e.g., freeways, railroads, large developments) the circulation system is discontinuous. West of City Creek, the circulation system is largely set by the significant constraints of the types mentioned above. In addition, many of the roadways of Highland are also within the City of San Bernardino, which makes it difficult for the City to generate a viable circulation system. The City has the opportunity to plan for a circulation system that will meet future traffic demands. In this section of the study, existing circulation conditions are reviewed to identify problem areas and provide a basis for circulation planning.

Roadway Classifications

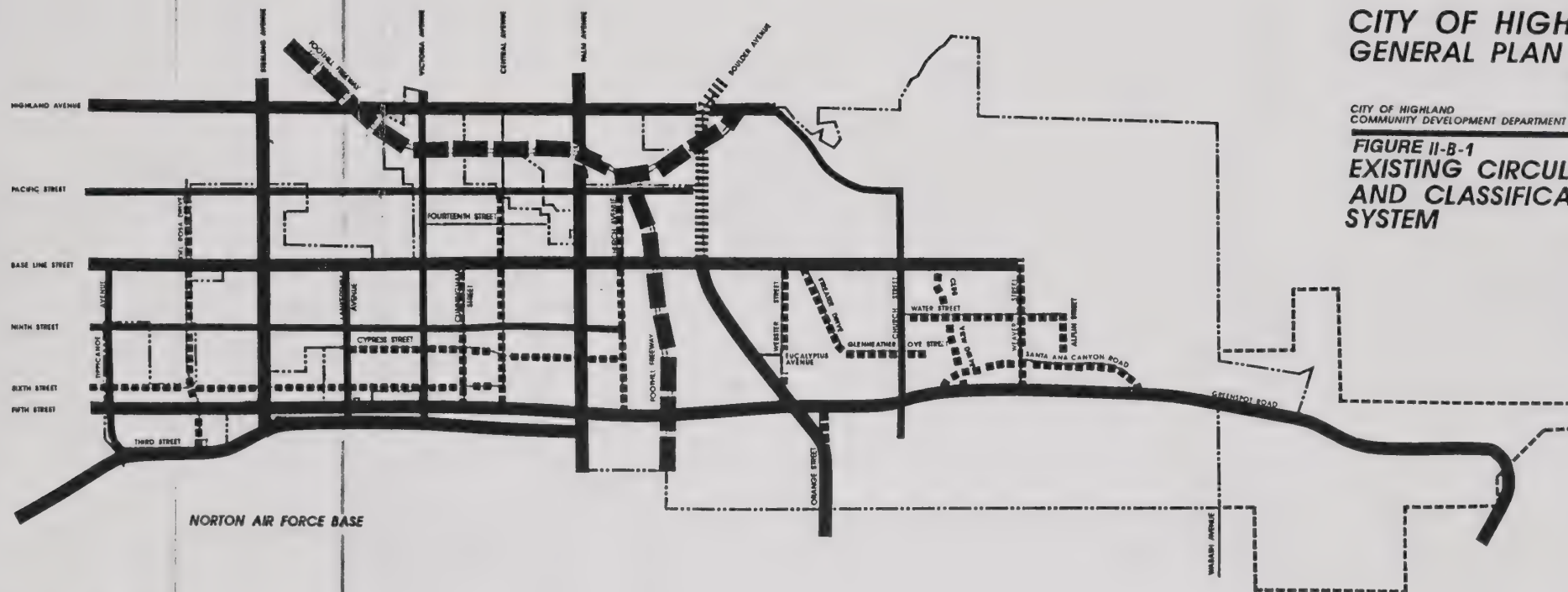
The existing street classification system is illustrated on Figure II-B-1. The Proposed Highland General Plan Circulation System is shown in Figure II-B-4. The Highland Circulation Classification system is based upon the existing San Bernardino County Department of Transportation Roadway Classification system and includes primary arterials, major highways, secondary highways, and collector streets. In addition, the City's circulation plan includes classifications for special roadway sections for major highways, secondary highways, and collector street applications.

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-B-1
EXISTING CIRCULATION
AND CLASSIFICATION
SYSTEM**



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  FREEWAY (Under Construction)
-  DIVIDED MAJOR HIGHWAY
-  MAJOR HIGHWAY
-  SECONDARY HIGHWAY

 COLLECTOR STREET

SOURCE: PLANNING NETWORK, 1992.

PLANNING NETWORK

II-B-3

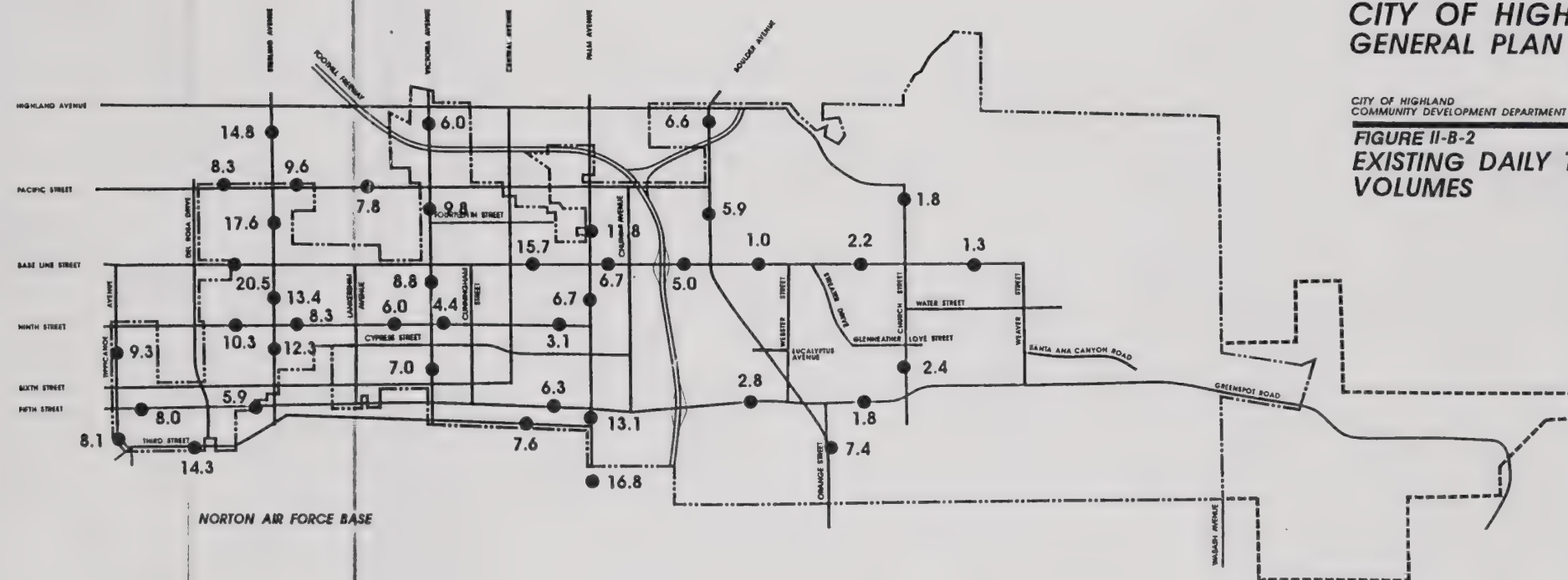


CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-B-2
EXISTING DAILY TRAFFIC
VOLUMES**



SOURCE: WESTON PRINGLE ASSOCIATES.

PLANNING NETWORK

II-B4

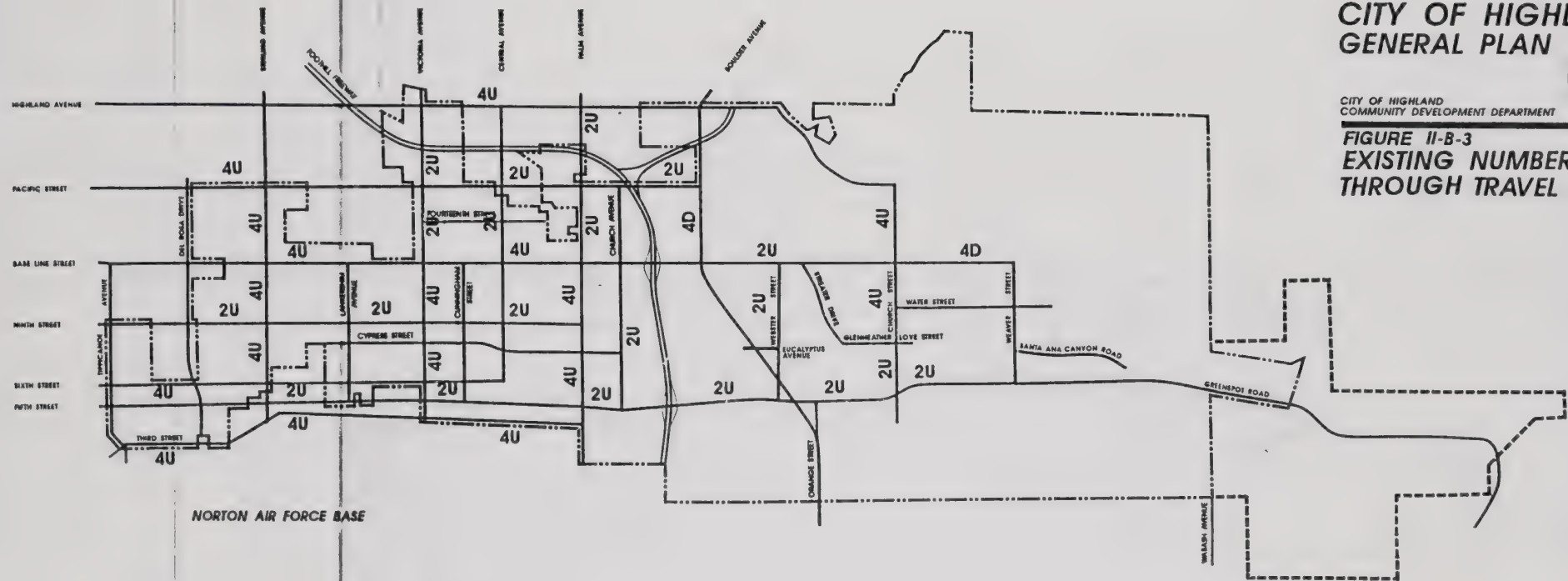


CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-B-3
EXISTING NUMBER OF
THROUGH TRAVEL LANES**

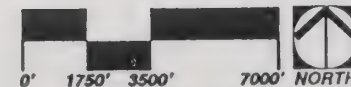


- CITY BOUNDARY
- SPHERE OF INFLUENCE
- NUMBER OF THROUGH LANES
- DIVIDED
- UNDIVIDED

SOURCE: WESTON PRINGLE ASSOCIATES.

PLANNING NETWORK

II-B-5

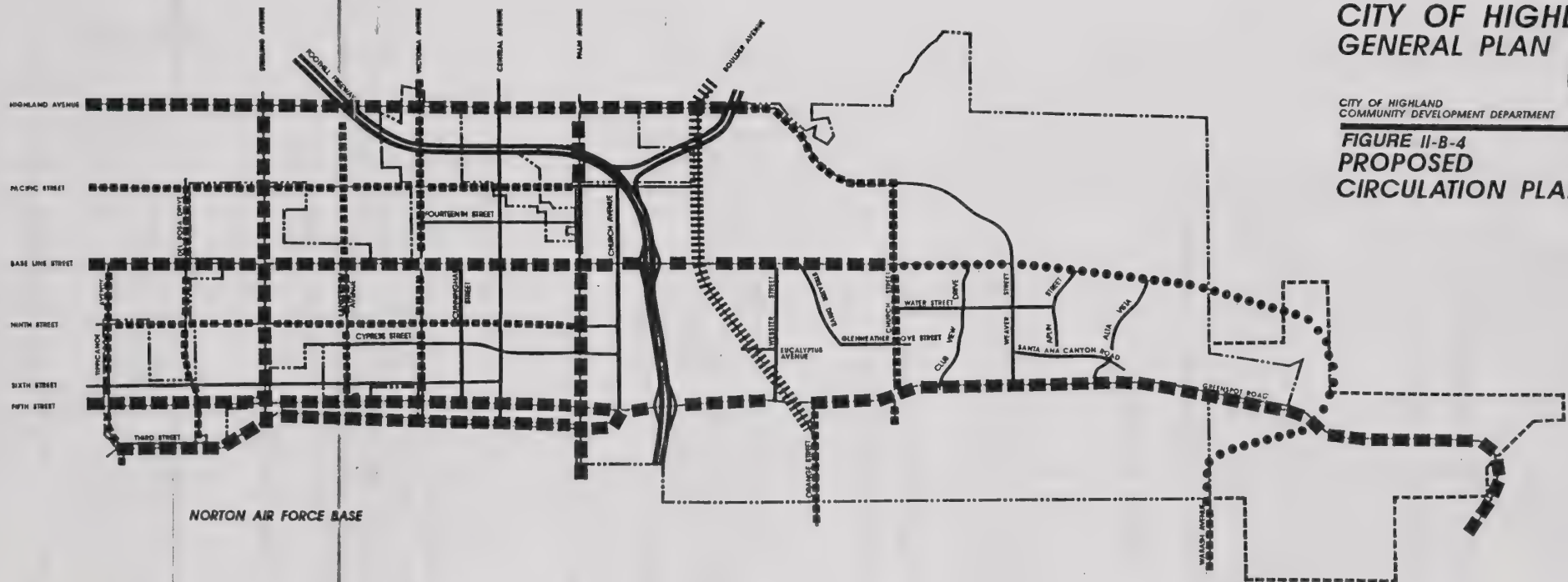


CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-B-4 PROPOSED CIRCULATION PLAN



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  PRIMARY ARTERIAL
-  MAJOR HIGHWAY
-  SECONDARY HIGHWAY
-  COLLECTOR STREET

-  FREEWAY
-  SPECIAL SECONDARY HIGHWAY
-  SPECIAL COLLECTOR

SOURCE: C. G. ENGINEERING, MARCH 1992.

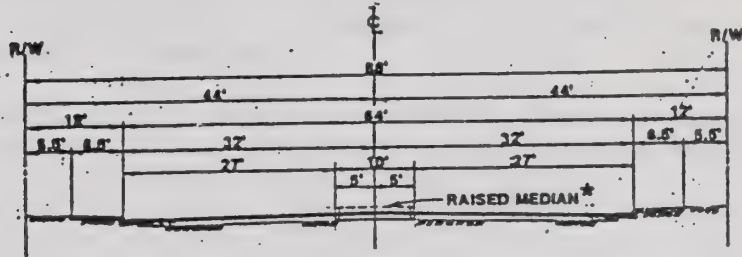
PLANNING NETWORK

II-B-6

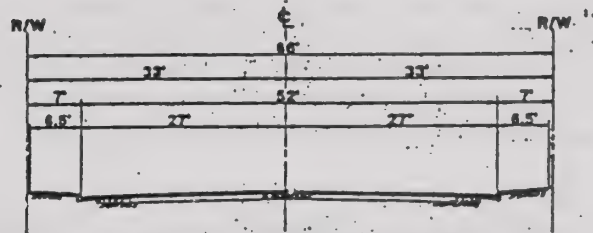




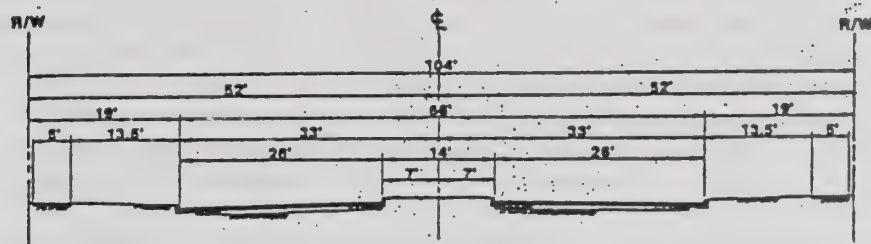
COLLECTOR STREET



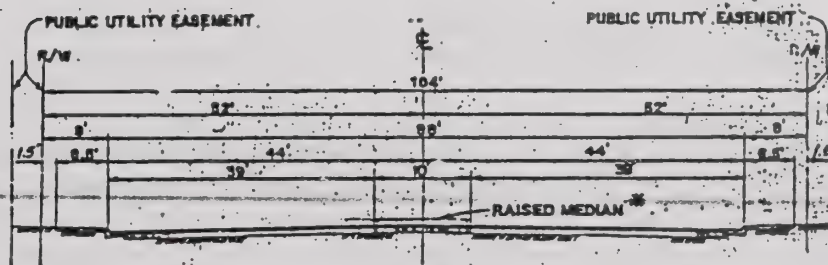
SECONDARY HIGHWAY



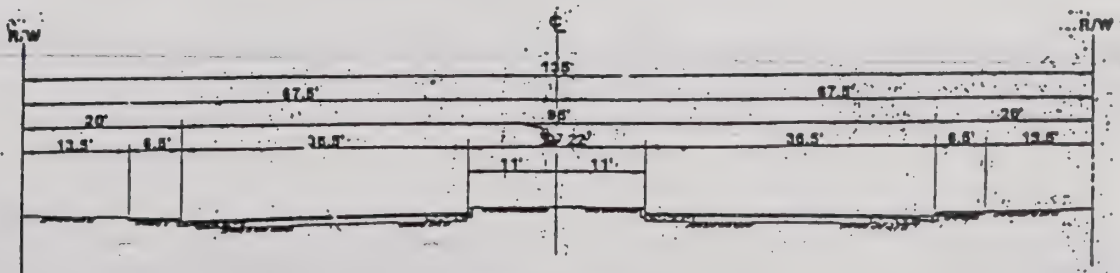
SPECIAL COLLECTOR STREET



SPECIAL SECONDARY HIGHWAY



MODIFIED PRIMARY ARTERIAL



PRIMARY ARTERIAL

The following defines each of these roadways by function:

- **Primary Arterial:** Primary arterials are limited access facilities which provide service to non-local through trips with a minimal level of direct access to adjacent land uses. They are designated as 95-foot roadways, curb-to-curb, within a minimum of 135-foot right-of-way, and carry up to three lanes of through traffic in each direction.
- **Major Highways:** Major highways provide service to non-local through trips, as well as providing limited local access. Ideally, curb cuts are minimized on major arterials, although, historically, such access control has been difficult to achieve in many jurisdictions. Major highways are designated as 80-foot roadways (including a 12 foot median) curb-to-curb, within 104-foot rights-of-way, which, when built to their full carrying capacity, provide for either three lanes for through traffic in each direction and a median for left-turning traffic, or two lanes in each direction, a left turn median lane, and a curb lane for parking.
- **Secondary Highways:** Secondary highways provide more local access than major arterials, but also provide some non-local through traffic service. They are designated as 64-foot roadways, curb-to-curb, within 88-foot rights-of-way. When built to their full carrying capacity, secondary arterials provide either two lanes in each direction with a raised or painted median providing left turns, or one lane in each direction with a painted median left turn lane and curb parking.
- **Collector Streets:** Collector streets are intended to carry traffic between residential neighborhoods and the larger street network. They are, generally, two-lane roadways which have a mixture of residential and commercial land uses along them. Collector streets are 44 feet, curb-to-curb, within 66-foot rights-of-way. Based upon planning criteria developed by the U.S. Department of Transportation and other agencies, average daily traffic volumes on collector streets should be held below approximately 15,000 vehicles per day in order to maintain acceptable levels of service at intersections and an environment compatible with residential land uses. Higher density residential land uses or side yards of single-family homes may be located adjacent to collector streets. Higher traffic volumes may be acceptable on certain collector streets, such as those with fronting commercial development or extra-wide cross sections.
- **Special Street Sections:** Highland's circulation plan includes two special street sections which have been designed to respond to unique traffic situations in the City. The following defines each of these roadways:
 - **Special Secondary Highway:** The portion of Base Line between Church Street and Greenspot Road is identified as requiring special secondary highway status. This section of roadway is designated as containing a 66-foot roadway, curb-to-curb, within 104-foot rights-of-way.
 - **Special Collector Street:** The area where Palm Avenue is constrained by existing historic structures in the Highland Historic Area is designated as a special collector street. In this location Palm Avenue contains a 52-foot roadway, curb to curb, within a 66-foot right-of-way. Restrictions on the amount and design of on-street parking within the Village Area is anticipated. It is also expected that the increase in pedestrian movement in the area will necessitate the installation of pedestrian crossings or signals which will reduce the efficiency in this section of the roadway system.
 - **Special Major Highways:** Both Firth Street and Third Street from Del Rosa Drive to Boulder Avenue are identified as a special Major Highway. This designation differs from the standard street section in that areas so designated will carry six lanes of traffic within the 104 foot right-of-way.

Existing Traffic Volumes

Existing daily traffic volumes within the study area are illustrated on Figure II-B-2. This data was obtained from the San Bernardino County Department of Transportation. The highest volumes are indicated on Base Line, which has a volume range between 20,500 vehicles per day (VPD) near the western boundary of Highland and 1,300 VPD in the far eastern portion of the City. Sterling Avenue has volumes that range between 17,600 and 12,300 VPD. Third Street has a volume range between 14,300 VPD near the western boundary of Highland and 7,600 VPD near the roadway end at Fifth Street. Palm Avenue has volumes that range between 13,100 and 6,700 VPD, while Ninth Street has volumes that range between 10,300 and 3,100 VPD.

Freeways

The extension of the Foothill Freeway (Route 30), which is currently under construction, bisects the City from north to south. This regional facility is intended to replace 1.5 miles of the existing State Route 30 (Boulder Avenue) which exists as a two lane roadway between the City of Redlands north to Base Line, and widens to a four lane expressway from Base Line to a point just north of the City of Highland at Highland Avenue. This freeway will provide the connecting link between Interstate 10 and existing State Route 30 which will continue as the Cross-town Freeway through the City of San Bernardino and ultimately connect to the 210 Freeway in the City of San Dimas. This particular section of the regional freeway system has been in the planning stages since the early 1960s.

Major improvements within the City which will be constructed as part of the Foothill Freeway project include the following bridge and interchange improvements:

- Local street overcrossings:
 - Palm Avenue
 - Central Avenue
 - Orange Street
 - Base Line
- Freeway overcrossings:
 - Fifth Street
 - City Creek
 - Boulder Avenue
 - Victoria Avenue
 - Highland Avenue
- Interchanges locations:
 - Fifth Street
 - Base Line
 - Highland Avenue
 - Freeway interchange at the intersection of the 30 and 330 highways.

Primary Arterials

Boulder Avenue

Boulder Avenue currently exists as a State Highway north of Fifth Street. It is as a divided highway north of Base Line. Boulder Avenue extends from the City of Redlands on the south, to Highland Avenue and Route 330 on the north. It is proposed as a primary arterial with a raised median from the northerly city limits south to Orange Street. The designation is proposed to change to a secondary highway to correspond with the designation of the City of Redlands through the Santa Ana River open space area where the street is known as Orange Street. The primary arterial could initially be striped for two lanes in each direction with on-street parking. Later as traffic needs dictate, on-street parking could be removed and the roadway restriped for three lanes in each direction.

Major Highways

Highland Avenue

Highland Avenue exists as a State Highway through the northern portion of Highland. It extends into San Bernardino west of Highland and connects with Boulder Avenue and Route 330. It then continues easterly through residential areas and links with Base Line at Weaver Street. Highland Avenue is proposed as a Major Highway to correspond to the existing sections in the City of San Bernardino from the westerly city limits to the proposed Route 330 crossing.

Base Line

Base Line is proposed as a Major Highway from the west city limits to Church Street, with the exception of an area between Church Avenue and Boulder Avenue which will be classified as a special Major Highway with six lanes of travel in an 104 foot right-of-way. Base Line extends from San Bernardino on the west and is eventually proposed to extend easterly and southerly into the City of Redlands. The roadway designation is proposed to be constant from the west city limits to Church Street; however, the typical section is proposed to change at Palm Avenue. This is because Base Line is fully improved west of Palm Avenue to the old City and County of San Bernardino standards. Since the traffic carrying capacity is not substantially different from the current City of Highland Standards it is proposed that the 72-foot curb-to-curb section be adopted as the Master Planned width west of Palm Avenue, and the current 80-foot curb-to-curb section be adopted between Palm Avenue and Church Street. East of Church Street within the proposed residential areas, the designation for Base Line is downgraded to a Secondary Highway. The section is modified slightly from the standard as constructed by the East Highlands Ranch PUD. Base Line is one of the roadways that has been reviewed as a roadway to have a future raised median.

Fifth Street/ Greenspot Road

This roadway extends from San Bernardino on the west through the City of Highland, becoming Greenspot Road east of Church Street and continuing through to the eastern city limits and into County unincorporated lands, and eventually the City of Redlands south of the Santa Ana River. The roadway is proposed as a Special 6-lane Major Highway from Del Rosa Avenue to Boulder Avenue, a Major Highway with a raised median from Boulder Avenue to Alta Vista Drive, and a Secondary Highway east of Alta Vista Drive. Major Highway throughout the City of Highland and has been designated as a roadway which will have a raised median. There will be a future full interchange with the Foothill Freeway.

Third Street

Third Street is proposed as a Special 6-lane Major Highway from the western city Limit at Tippecanoe Avenue to Palm Avenue, and a Major Highway from Palm Avenue to Fifth Street. Third Street is within the City of San Bernardino between Shirley Avenue and Victoria Avenue; however, it reenters the City of Highland at Victoria Avenue. It is proposed that the Major Highway designation continue east of Palm Avenue and that an intersection with Fifth Street be provided. This intersection is proposed to align with existing Church Avenue on the north side of Fifth Street. This will allow the expected traffic from the future uses within Norton Air Force Base and the surrounding land uses as proposed on the City of Highland's Land Use Element of the General Plan to traverse along Third Street and onto Fifth Street, the main east/west highway in the eastern part of Highland, without having to "jog" north on Palm Avenue to Fifth Street. The proposed intersection of Third Street and Fifth Street at Church Avenue would necessitate changes to a previously approved development at the existing cul-de-sac of Third Street. This development was approved while this area was still within the County of San Bernardino, however no progress has been made on it to date.

Sterling Avenue

Sterling Avenue is proposed as a Major north-south highway through the City of Highland. It extends from Norton Air Force Base on the south through the City of Highland and north into San Bernardino. There is an undercrossing at the existing Foothill Freeway in the City of San Bernardino.

Palm Avenue

Palm Avenue is proposed as a Major Highway from the southerly city limits north to Base Line. This designation is consistent with that of the City of Redlands to the south. Palm Avenue is the chief route for traffic currently entering Highland from the south. The City of San Bernardino has also designated Palm Avenue as a Major Highway. In fact, it is built to that standard south of Highland Avenue. However, between the northerly city limits and Base Line, it is proposed that the roadway designation be downgraded to a Special Collector status due to the existing "Historical" area of Highland which this roadway traverses and the fact that the upgrade to Major Highway standards could not be accomplished without extensive removals of the existing buildings. The roadway is therefore proposed to be designated as Special Roadway section on the Circulation Map.

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Options for constructing a bypass around the Highland Historic District are discussed in the Issues, and Concepts, Options and Alternatives sections of the Circulation Element.

The curb-to-curb width shown on the Circulation Map is consistent with the existing street width between Pacific Street and Main Street. This special section will allow for all buildings to remain and still carry four lanes of traffic through this area if the traffic volumes warrant. It can initially be constructed for two lanes of traffic and could be upgraded by means of eliminating street parking and restriping to provide for four lanes of traffic. Exclusive turning lanes could not be constructed due to width restrictions caused by existing buildings. Coordination with the City of San Bernardino is necessary for the proposed Special Collector designation since Palm Avenue crosses city limit lines between Highland and San Bernardino several times between Base Line and Atlantic. Since Caltrans will be improving Palm to Major Highway standards between Atlantic and Nona and it is existing at Major Highway standards between Base Line and Messina, it is recommended that the limits for the Special Collector section be from Messina to Nona.

Secondary Highways

Pacific Street

Pacific Street exists from San Bernardino on the west to the existing residential development east of Boulder Avenue. However, with the construction of the future freeway, Pacific Street will not have a freeway crossing. There are only sporadic areas west of Palm Avenue which are within the city limits of Highland. Pacific Street is therefore designated as a Secondary Highway to correspond with the designation by the City of San Bernardino. East of Palm Avenue, it is proposed to be downgraded to a collector roadway to tie into Church Avenue subsequent to construction of the freeway.

Ninth Street

Ninth Street is designated as a Secondary Highway and carries traffic from the City of San Bernardino on the west to Palm Avenue. The street currently does not extend east of its connection to Palm Avenue.

Victoria Avenue

Victoria Avenue is designated as a Secondary Highway and extends from Norton Air Force Base at the south city limits north through Highland and into San Bernardino. It will have a crossing with the future freeway but no interchange. The designation as a Secondary Highway corresponds with the City of San Bernardino's designation. This roadway is designated by the City Council as one of the streets to receive a future raised median, and is so designated in this Circulation Element.

Church Street

Church Street is designated as a Secondary Highway. It is nearly fully improved in the residential area between Fifth Street and Highland Avenue. North of Highland Avenue, Church Street is downgraded to a Collector. Because of the confusion between Church Street and Church Avenue, each street will be referred in the plan based on whether it is east or west of the 30 Freeway (e.g., "Church Street (west of the Foothill Freeway)").

Highland Avenue

Highland Avenue, east of the proposed Foothill Freeway, is designated as a Secondary Highway through the residential area, and will carry traffic from the proposed freeway interchange through to the Secondary Highway at Church Street (west of the Foothill Freeway). East of Church Street (west of the Foothill Freeway), it is proposed to downgrade Highland Avenue to Collector status.

Tippecanoe Avenue

Tippecanoe Avenue at the westerly city limits is designated as a Secondary Highway to correspond with the City of San Bernardino's designation.

Del Rosa Drive

Del Rosa Drive is designated as a Secondary Highway and extends from Norton Air Force Base on the south, to an existing interchange with the Foothill Freeway on the north. This roadway enters and leaves the city limits several times between Sixth Street and Pacific. The Secondary Highway designation corresponds with the County of San Bernardino's designation and the existing constructed section. However, it contrasts with the City of San Bernardino's major highway designation for the same street.

Lankershim Avenue

Lankershim Avenue is designated as a Secondary Highway from the southerly city limits at Fifth Street to the northerly city limits just north of Base Line. This roadway is designated a Secondary Highway to correspond with its designation by the City of San Bernardino, as it has an existing freeway interchange which will be maintained upon the completion of the remainder of the Foothill Freeway project. The road currently does not go through to Base Line from the south, nor does it extend from Arden Avenue in the City of San Bernardino south of Base Line. However, completion of these missing links would provide a Secondary Highway from the freeway interchange in San Bernardino south to Norton Air Force Base.

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Base Line

As mentioned previously, Base Line east of Church Street (west of Foothill Freeway) is designated as a Secondary Highway. It is proposed to extend easterly to Weaver Street and then continue easterly and southerly, eventually intersecting Greenspot Road and continuing south to the southern city limits. It is proposed to align with the prolongation of Wabash Avenue in the City of Redlands, south of the Santa Ana River. The roadway would be proposed to extend south into the City of Redlands across the Santa Ana River. The designation corresponds to the designation for Wabash Avenue in the City of Redlands at San Bernardino Avenue.

The precise alignment of Base Line south and east of East Highlands Ranch still needs to be established; however, the general parameters of this Circulation Element are that the roadway extends northerly and easterly of existing Tracts 14362 and 14326 and eventually aligns with the aforementioned Wabash Avenue. Included would be a bridge structure at Plunge Creek. Coordination with the City of Redlands is essential to ensure the planned extension of Wabash Avenue north from Redlands.

Collector Streets

Del Rosa Avenue

Del Rosa Avenue is proposed as a Collector Street from Third Street north to its intersection with Del Rosa Drive in the City of San Bernardino. The street currently exists except for a link between Fifth Street and Sixth Street.

Fourteenth Street

Fourteenth Street is proposed as a Collector from Victoria Avenue easterly to Cole Avenue. It will collect traffic from all the residential neighborhoods surrounding it and eventually connect with Base Line via Cole Avenue.

Cole Avenue

Cole Avenue is proposed as a Collector between Fourteenth Street and Base Line in order to provide the necessary link to the Major Highway.

Sixth Street

Sixth Street is proposed as a Collector from the City and County of San Bernardino areas on the west through the City to Central Avenue. The street enters and leaves the city limits at several locations between Tippecanoe and Central. It is not proposed to continue Sixth Street through to Palm Avenue due to the need to cross the existing City Creek Bypass Channel and the proximity of Cypress Street to the north and Fifth Street to the south providing through access to Palm Avenue.

Although Sixth Street is designated as a Secondary Highway on the City of San Bernardino's General Plan, most of the portion east of Tippecanoe is within Highland. With most of the proposed land uses adjacent to Sixth Street being low density residential, traffic projections do not necessitate designating this as a Secondary Highway. It is therefore recommended that the Collector Street designation is appropriate for Sixth Street as its majority is not fully improved.

Cypress Street

Cypress Street is proposed as a Collector from Lankershim Avenue to Church Avenue (east of the Foothill Freeway).

Church Avenue

Church Avenue (east of the Foothill Freeway) is proposed as a Collector from Pacific Street south to Fifth Street. At Fifth Street, as previously mentioned, it is proposed that the intersection be modified to include the extension of Third Street at the intersection. Church Avenue (east of the Foothill Freeway) will carry traffic from the former Pacific Street extension. Traffic on Pacific Street east of Palm Avenue will be permanently diverted south on Church Avenue (east of the Foothill Freeway) to Base Line after completion of construction of the proposed freeway.

Cunningham Street

Cunningham Street is proposed as a Collector between Fifth Street and Base Line.

Central Avenue

Central Avenue is proposed as a Collector between Third Street and the northerly city limits near Pacific Street. The proposed freeway will have an overcrossing for Central Avenue; however, no interchange is proposed. Central Avenue currently terminates south of Sixth Street. In order to link with Fifth Street, the roadway would need to be extended across the City Creek Bypass Channel with the appropriate structure; however, this is proposed to be necessary in order to provide a complete circulation pattern through to the Major Highway (Fifth Street).

Webster Street

Webster Street is proposed as a Collector from Base Line south to its intersection with Fifth Street. It is proposed that the Webster intersection with Boulder Avenue be realigned to provide good sight distance, or that proper signalization be installed.

Eucalyptus Avenue

Eucalyptus Avenue is proposed to be designated as a Collector between Boulder Avenue and Webster Street. The portion of Eucalyptus east of Webster Street is within existing residential and is already constructed to local street standards. It is projected, however, that most of the Eucalyptus traffic will be concentrated at Webster Street and further west to Boulder Avenue. Therefore, this short section is recommended as a Collector.

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Glenheather/ Streater Drive

This roadway is proposed as a Collector Street from Base Line south, and east to the intersection with Church Street. It serves to collect traffic from the local streets in the residential areas surrounding this through street.

Highland Avenue

As was mentioned previously, Highland Avenue east of Church Street (west of the Foothill Freeway) is proposed as a Collector. The roadway will continue east and south of Church Street (west of the Foothill Freeway) to intersect Base Line at the existing intersection with Weaver Street. This roadway is proposed to exist along the northern portions of the East Highlands Ranch residential development and will serve as the through link to Base Line for those developments. This designation would be consistent with the previously approved East Highlands Ranch Planned Unit Development.

Weaver Street

Weaver Street is proposed as a Collector as a natural southerly extension of Highland Avenue. The limits are Base Line on the north to Greenspot Road on the south. It would serve to collect traffic from existing development as well as development currently under construction.

Club View Drive

Club View Drive is proposed as a Collector between Base Line and Greenspot. It is currently built to such standards within the new developments in this area and is proposed as a link between the Major and Secondary Highways.

Water Street

Water Street is proposed as a Collector between Church Street (west of the Foothill Freeway) and Aplin Street. It is not proposed to extend east of Aplin Street because previously approved developments in this area did not provide for this extension.

Aplin Street

Aplin Street is proposed as a Collector between Base Line and Santa Ana Canyon Road. Portions of this road are shown on tracts currently under construction or previously approved. The City should require extensions of the roadway so that a Collector eventually connects Base Line with Santa Ana Canyon Road.

Santa Ana Canyon Road

Santa Ana Canyon Road is proposed as a Collector between Weaver Street and Alta Vista. This road provides a natural east/west link for the area which is rapidly developing west of Plunge Creek.

Alta Vista

Alta Vista is a recently named street which is not yet constructed. It is shown on the approved tract map for Tract 14362 (Pulsar Development). It will link Santa Ana Canyon Road with Greenspot Road to the south and is proposed to continue north of the aforementioned tract to connect to the proposed Base Line extension.

Orange Street

This roadway is proposed as a Collector from Boulder to Fifth Street. It currently exists as an unimproved blacktop roadway but would provide a benefit to circulation for traffic northbound on Orange Street entering Highland and wishing to travel to and from the eastern portion of Highland via Fifth Street.

Church Street

As previously mentioned, Church Street (west of the Foothill Freeway) north of Highland Avenue is proposed as a Collector to the northerly city limits. It could then be extended into the City of San Bernardino if development is proposed northerly of its current terminus near the City of Highland city limits. It would serve the current developments north of Highland Avenue by collecting traffic and distributing it to the Secondary Highways of Highland Avenue and Church (west of the Foothill Freeway) Street to the south.

Palm Avenue

(See Major Highways)

Public Transit

Public Bus System

The City of Highland has several OMNITRANS routes which run through the City. Existing routes are illustrated in Figure II-B-5. Generally bus routes are dictated by need, which in turn are generated by the City's land use pattern. As the City develops, it is expected that the transportation system will be developed to meet the need.

Bikeways

There are presently no designated bikeways in the City of Highland. Regional trails do exist in outlying County areas, surrounding cities and National Forest lands. Critical bicycle trail links outside of the City of Highland include:

- ***Santa Ana River Trail System:*** A multi-use trail has been designated along the south side of the Santa Ana River Channel. This trail is part of a larger regional trail system effort started in 1955, to run from the headwaters of the Santa Ana River just above the City to the Pacific Ocean. Currently no formal trails have been constructed in the portion of the system which runs through the study area. Partial construction of a mountain bike trail which would tie the Santa Ana River Trail system into the National Forest trail system has been constructed near the Seven Oaks Dam northeast of the City.

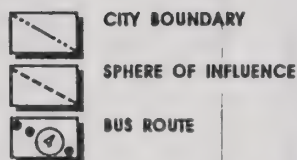
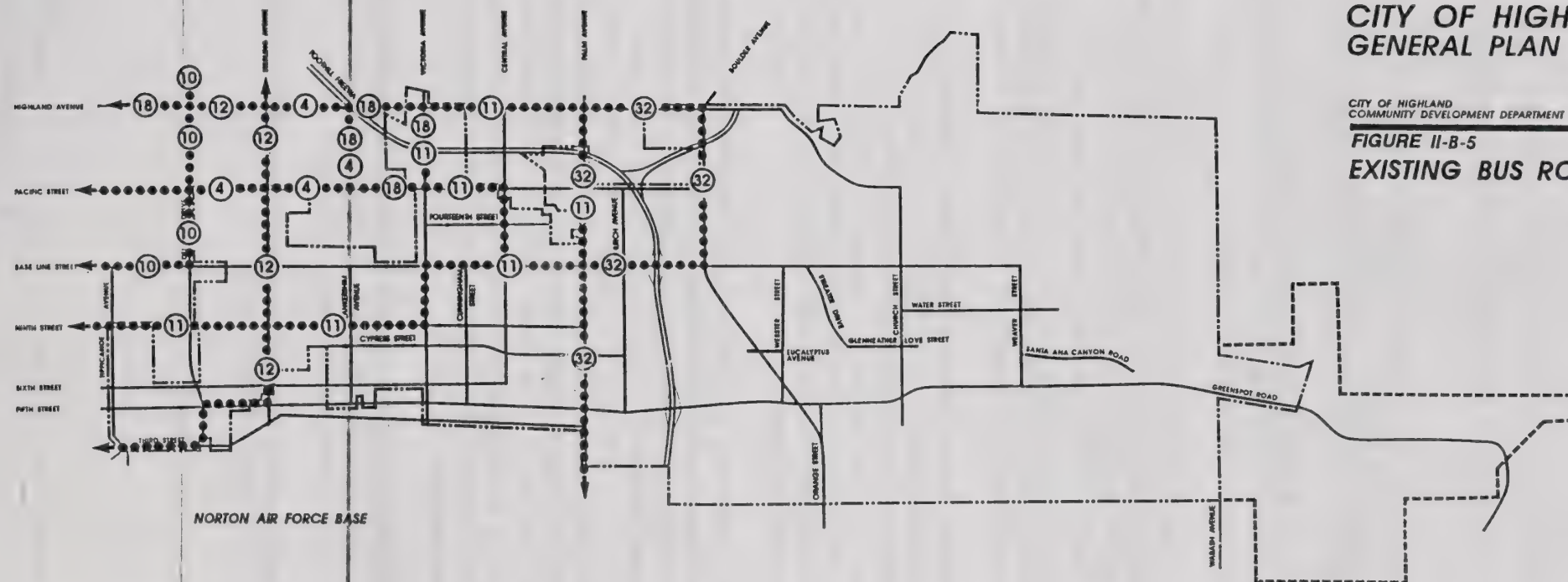
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CITY OF HIGHLAND GENERAL PLAN

CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



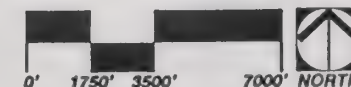
FIGURE II-B-5
EXISTING BUS ROUTES



SOURCE: OMNI TRANS ROUTE MAPS AND SCHEDULES, 1992.

PLANNING NETWORK

II-B-17



The Santa Ana River Trail system proposes the following trails within the Highland General Plan study area:

- **Santa Ana River Regional Trail:** This regional trails system enters the study area along the south side of the Santa Ana River channel south of the Norton AFB and travels east along the channel levee. The trail is proposed to include both paved and unpaved trails.
 - **City Creek Connection:** A paved bike path is planned to extend north of the trail along Tippecanoe Avenue to Central Avenue where the trail will travel east along the north side of the Santa Ana River and link with the City Creek trail.
 - **Palm Avenue Link:** A connecting trail link is also planned along Palm Avenue at City Creek south to the regional trail along the south side of the Santa Ana River. This link connects a loop which runs parallel to both sides of the Santa Ana River with connections at Tippecanoe Avenue and Palm Avenue.
 - **Orange Street:** An unpaved riding and biking trail is planned along the northerly extension of Orange Street from the Santa Ana Regional Trail to the City Creek Trail.
 - **Greenspot Road:** As part of the Santa Ana River Trail System, Greenspot Road will be used as a connecting link to the county green belt trail, mountain bike trails in the National Forest, and the extension of the Santa Ana River and Crafton Hills Trails.
 - **Other Trail Links:** Other trail connections include a riding and hiking trail along the abandoned AT & SF railway which runs through the study area, a similar type trail connecting Cone Camp with the region trail system.
- **County of San Bernardino:** The County is currently working to establish a formal County trail system. A portion of this proposed system would include a greenbelt trail along the foothills of the San Bernardino Mountains and just north of the City of Highland. An overall County trail system, however, has not been defined.
 - **City of San Bernardino:** The City of San Bernardino's General Plan establishes policy for the location and construction of a city-wide bike trails system, but has yet to implement the policy.
 - **City of Redlands:** The City of Redlands has prepared a draft bicycle circulation system in the Draft General Plan now being prepared. The proposed system includes connections to the City of Highland in the following locations:
 - **Santa Ana River Trail:** The City indicates several Class III (signed bikeways), and Class I (bike paths) connections to the north, presumably to the future Santa Ana River Trail. Such connections would link the two cities via this regional trail system.
 - **Orange Street:** A Class III trail has been designated along Orange Street. This trail would connect with the City of Highland at Boulder Avenue.

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Rail Service

Long Distance Passenger Service

Presently in the neighboring City of San Bernardino there are four Amtrak trains that service the area. Two eastbound and two westbound trains stop daily. Both trains, the Southwest Chief and the Desert Wind, serve Los Angeles to the west and Chicago to the east via northern and southern routes. Other than this passenger service, there are no railroads that service the City of Highland.

Commuter Service

The Southern California Regional Rail Authority (SCRRA), is developing Metrolink, a commuter train network, that will consist of nine rail corridors connecting San Bernardino, Los Angeles, Ventura, Riverside, Orange and San Diego Counties. Trains directly serving the study area will run on existing Southern Pacific Railroad tracks adjacent to the San Bernardino (I-10) Freeway. Commuter rail service is expected to reach the City of San Bernardino sometime in 1993, with service extending as far as Orange Avenue in the City of Redlands between 1993 and 1995 (see Figure II-B-6).

Freight Service

The AT&SF and Southern Pacific railroads operate all freight service in the San Bernardino/Highland area. The AT&SF maintains facilities just west of downtown San Bernardino, while Southern Pacific's facilities are in south Colton.

Airports

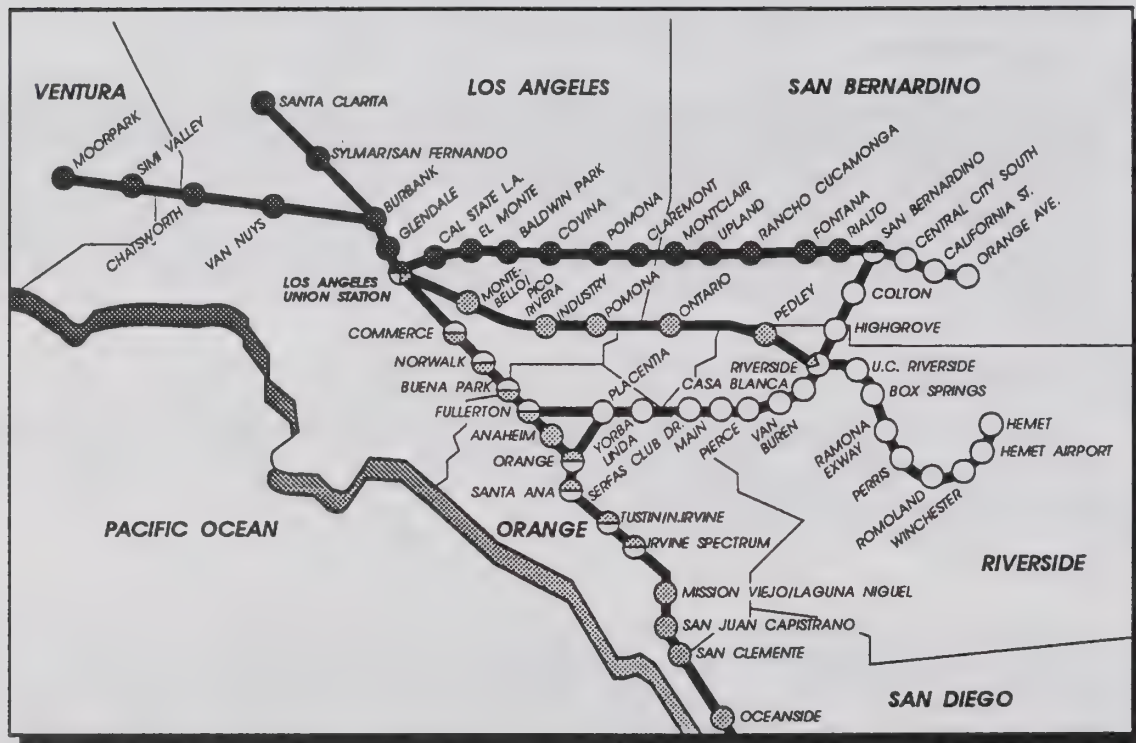
The nearest commercial airport is Ontario International Airport (ONT), 30 miles to the west of Highland. Air carrier and air cargo operations are provided at Ontario International Airport. There are two general aviation airports in the area, the Rialto Municipal Airport in the City of Rialto, and Redlands Municipal Airport in the City of Redlands. Norton Air Force Base, adjacent to Highland's southern border, currently accommodates military aircraft and a limited number of commercial aircraft which are being reconditioned. Norton is in the process of going through a base closure, and plans are being prepared for the eventual reuse of this facility. There is a possibility that Norton could support commercial air carrier and air cargo operations in the future.

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-B-6
METROLINK COMMUTER
TRAIN SYSTEM**



OPENING OCTOBER 1992

Pomona-Los Angeles Union Station
(Service to extend to San Bernardino early 1993)

Moorpark-Los Angeles Union Station

Santa Clarita-Los Angeles Union Station



OPENING 1993

Riverside-Los Angeles Union Station via Ontario

Oceanside-Los Angeles Union Station



OPENING POST-1993

Riverside-Los Angeles Union Station via Fullerton

San Bernardino-Riverside-Irvine

Hemet-Riverside

Redlands-San Bernardino

SOURCE: LOS ANGELES COUNTY TRANSPORTATION COMMISSION, 1992.

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Scenic Highways

Although the City of Highland has no designated Scenic Highways in the City, the County has designated the following routes as Scenic Routes and Scenic Trails in the surrounding unincorporated areas:

- *County Designated Scenic Routes*
 - State Route 18 from San Bernardino to the Los Angeles County Line.
 - State Foothill Freeway from State Foothill Freeway (Boulder Avenue) to State Route 18.
 - Orange Street within the City of Redlands sphere of influence.
 - Highland Avenue within the City of Redlands sphere of influence.
 - Alabama Street within the City of Redlands sphere of influence.
 - State Foothill Freeway within the City of Redlands sphere of influence.
- *County Designated Scenic Trails*
 - Santa Ana River Trail
 - San Bernardino Greenbelt Trail
 - Day Creek Trail
 - City Creek Trail

Truck Routes

Currently the City of Highland has designated a system of truck routes linking industrial areas with major roadways and freeway connections throughout the City. According to planning documents of adjacent cities and the unincorporated portions of the County, the designation of such routes is listed as an objective, but has yet to be implemented.

Along with existing truck routes, there are several quarry operations within the Santa Ana River Wash which contribute, or have the future potential to contribute to the local truck traffic.

The C.L. Pharris Sand and Gravel Operation is located just east of Orange Street. Current processing operations produce approximately 2,700,000 tons of product per year.

Circulation

Agreements between C.L. Pharris and surrounding cities have been drafted to include provisions for the expansion of quarry activities while reducing the truck traffic impact. Before Pharris can exceed processing 4,000,000+ tons of aggregate per year at this location, off routes will need to be established beneath or across Orange Street in order to reduce truck traffic on local streets. Pharris has provided estimates that once tunnels are installed underneath Orange street, and the plant reaches a capacity of 7,000,000 tons per year, the need for local deliveries is estimated to be reduced.

Robertson Readymix also has approximately 111 acres of mining operations within the City of Highland. This operation is located on Orange Street in the east basin of the Plunge Creek. Approximately two thirds of the trips generated from this facility represent Robertson Readymix vehicles, while the remaining one-third are other private contractors.

A third quarry site has been proposed within the County east of the City of Highland to serve the construction of the Seven Oaks Dam in the upper Santa Ana Canyon. The site is approximately 10,000 feet long and 3,000 feet wide, and has an area of 603 acres. The maximum volume of material necessary to be transported for the construction of the Seven Oaks Dam facility is estimated to be 26,600,000 cubic yards over a five year period.

As of the writing of this element, the proposed method of transporting mined material for the construction of the dam appears to be through the use of conveyers and off road haul trucks. However, the City continues to be concerned about potential impacts to circulation in the east Highland area that may be created from mining operations for the construction of the Seven Oaks Dam in relation to the circulation in the east Highland portion of the General Plan study area, and specifically in the area of the Cone Camp Road and Greenspot Road.

Parking

Most uses within the Highland General Plan study area provide sufficient parking facilities either on-site or on adjacent street frontages. Although the parking opportunities in the low density residential portions of the community are ample, older strip commercial and industrial uses along Base Line, Fifth Street, and Third Street often are deficient.

The Highland historic district has also been identified as being a parking deficient area. Because of the need to create through traffic lanes on Palm Avenue, right-of-way which has traditionally been used for parking in this historic downtown area is lacking.

Issues

Freeway Impacts

The construction of the 30 Freeway brings not only the opportunity to expand the availability of regional transportation to Highland residents, but also both creates and disrupts land use patterns in the City. The influence the Freeway will have on traffic, interchange adjacent land uses, noise, and the City's image will need to be addressed.

Norton AFB Closure

The closure and ultimate reuse of the base lands will have a definite impact on the future land use and circulation patterns in the area. According to the Draft Environmental Impact Statement (EIS) for the Disposal and Reuse of Norton AFB, the proposed action would include the development of a mixed use project with industrial, commercial and office, and airport uses. Although traffic affecting the City of Highland will be drastically reduced once the base closes, projections indicate that the reuse of the facility will ultimately increase area traffic and congestion on specific roadways in surrounding cities.

As described in the Norton AFB Draft EIS, improvements to local streets outside the base boundaries and within or near the City of Highland would include widening Fifth Street to four lanes (including the City Creek bridge) between Del Rosa Drive and Victoria Avenue by 2003, and widening Alabama Street to four lanes between Palmetto and Third Streets by 2013. In addition, the Norton AFB Draft EIS indicates that the Victoria Avenue and Fifth Street base entrance will be used as a major entrance to the future project and proposed passenger terminal. Unfortunately, the impact of such a facility remains uncertain until a final specific plan for the reuse of the base is completed.

Regional Transportation Planning

There are a number of regional studies which will have to be addressed as part of the General Plan program. These studies include SCAG's Riverside/San Bernardino Western Area Transportation Study and Regional Mobility Plan, AQMD's traffic system management policies adopted as part of the Regional Air Quality Management Plan, and the ultimate adoption of County Congestion Management Plan.

Traffic modeling results for the proposed General Plan yield consistent but higher traffic volumes when compared to the Regional RIVSAN 2010 model completed by the Southern California Association of Governments (SCAG). Differences in SCAG socioeconomic data for the study area appear to be inconsistent with General Plan projections based on proposed land uses. It will be important to coordinate the proposed land use data with SCAG and other regional agencies so that regional planning efforts can be adjusted to reflect proposed General Plan policies.

Future Traffic

Demands based on vehicle trips generated at build out of the General Plan, future roadway capacity in certain areas of the City will not be able to meet traffic demands because full right-of-way width will not be available. Areas of concern include:

- Palm Avenue north of Base Line;
- Base Line from Palm Avenue to Boulder Avenue; and
- Fifth Street from Church Street to Boulder Avenue.

Physical Improvements and Standards

Throughout the City of Highland, physical improvements to the roadways are needed. The use of "roll-over" curbs should be avoided and existing ones should be replaced with conventional curbs. Some roadways have open drainage channels, which are either fenced off or openly accessible to motorists and pedestrians. enclosing the channels, while keeping full drainage use, would make vehicle and pedestrian travel safer, as well as possibly increasing the right-of-way and curb-to-curb widths.

Providing consistent roadway cross sections with the surrounding cities and county is required to provide safe and proper transitions from the City of Highland to adjacent communities. This is especially true along the western and northern border of the City where city boundaries are irregular.

Right-of-way and curb-to-curb widths are inconsistent throughout the City. Typical street section standards will need to be established and consistently enforced as development occurs. When the opportunity arises and it is appropriate, changes should be made to the existing roadways to bring them to the current standards.

The City of Highland is deficient in street signage and pavement striping. Further study as part of the City's Capital Improvement planning process will need to be done to establish needs for the City. All intersections containing high traffic volumes and speeds should have left turn channelization striping.

Areas of Poor Traffic Flow

Various roadways within the City of Highland have periods of poor traffic flow. This generally occurs during peak hour periods, yet it can occur during off-peak hours. Reducing traffic congestion on City roadways is tied to the City's goals to be sensitive to regional air quality, energy conservation and area wide mobility issues. Local circulation problem areas should be recognized, analyzed by a qualified traffic engineer in order that future needs for road improvements are balanced with regional mandates to improve air quality, energy efficiency, and mobility. Palm and Victoria Avenue have been recognized as potential problem areas within the City.

In addition, the City will need to consider the implementation of transportation system management and congestion management techniques in coordination with regional efforts to increase the efficiency of existing and future roadways.

Designated Truck Routes

The maintenance of a comprehensive truck route system which will accommodate both commercial, industrial, and mineral extraction uses within the City is a major circulation issue. The maintenance of existing truck routes should control deterioration of City streets as a result of truck weight factors, the hauling of hazardous substances through residential areas, as well as to control truck travel on streets inappropriate for that purpose.

Third Street and Fifth Street

Determining which one of these streets is to be chosen as the major arterial for the crosstown traffic will be an important decision for the area's land use and circulation future. The intersection of these streets at Palm Avenue also needs investigation for the best possible ultimate alignment.

Base Line Extension

Although Base Line has been identified as a Special Secondary Highway between Church Street and Greenspot, an appropriate alignment has yet to be determined. Because of the varied topography in this area, construction of this connection in the City's east end could prove to be costly. As future circulation in the east Highland area is finalized, the City will need to assess the necessity of this roadway.

Circulation

East Highland Circulation

The circulation corridor generally described as east of Boulder Avenue between Base Line and Greenspot Road lacks a formal circulation system. Residential tract development in this area has created the need for additional east/west circulation links, but has also restricted through collector street access from being constructed through the planned developments. The Circulation Plan will need to designate the need for collector streets within these emerging neighborhoods while protecting the same neighborhoods from undue traffic.

The need for a major circulation connection to the City of Redlands from the eastern portion of the study area is also at issue. Although a connection via Greenspot Road does now exist, future development both inside the study area and within the unincorporated county area may necessitate the provision of an improved north/south roadway to link the two cities together. Of particular concern is the provision of a north/south connection from Greenspot Road across the Santa Ana River, between Boulder Avenue and Wabash Avenue.

Existing Street Maintenance and Structural Integrity

It has been noted that older areas in the City have experienced failures in the underlying roadbed. Failures of this kind occur in areas which were built under past standards for roadway construction, lack proper drainage facilities (e.g., curb, gutter, storm drains, cross gutters, etc.), or have received inadequate maintenance prior to incorporation. Unless emergency measures need to be taken for safety reasons, streets needing repairs and possible reconstruction will need to be specifically located, assessed, and prioritized before action can be taken to correct problems. Since those streets needing the most help are located in the west end of the City, the creation of an efficient funding mechanism to support this rebuilding effort is also at issue (see also Public Services and Facilities Issues).

In addition, specific roadway sections within the east end of Highland are in need of repair or complete replacement due to the extensive use by local quarry operations. Although the completion of the Foothill Freeway will allow nearby quarry operators nearly direct access to the regional freeway system, appropriate routes, specific standards, and appropriate impact mitigation funding programs will need to be developed in order to avoid costly maintenance of east Highland roadways caused by heavy truck traffic in the area.

Alternative Modes of Transportation

As the City develops, it will be the City's responsibility to integrate alternatives to the existing dependency on the automobile as the main mode of transportation in the study area and throughout the region. The issue of how such alternatives will effect future land use decisions and balance with the need to achieve air quality goals will become more and more important in the future.

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In addition, the linking of all forms of transportation to create an increase in the number of transit choices residents have will become a more important issue as the City nears buildout.

Parking

The need for additional parking in areas of strip commercial and industrial uses is evident throughout the western portion of the study area. Unfortunately, property depths along Highland's major commercial and industrial streets create difficulties when attempts are made at meeting current parking ratios while using existing buildings. The introduction of policies for both the enhancement of existing parking facilities and provision of innovative standards for new development for uses occurring along Highland's major commercial and industrial corridors is a major issue in the community.

In addition to the City's commercial and industrial corridors, the Highland Historic District is vastly deficient in parking supply. If the district is to become a viable commercial and office node of the community, the ability to park near business uses will need to be enhanced. This may mean relaxing some of the City's current parking standards to meet the physical challenges in the district.

Circulation

Concepts, Options, and Alternatives

Freeway Overlay Study

Upon completion of the 30 Freeway, the City of Highland will be faced with the responsibility of absorbing and distributing traffic where freeway interchanges have been constructed. The introduction of the freeway into the City's existing land use pattern will have a definite impact on the physical design and organization of future land uses. In order to tie circulation, design, and land use components together, the City should consider undertaking a focused study of the 30 Freeway Corridor.

Highland/Foothill Freeway Overlay Study: An overall study of the specific issues involved with the development of land uses along the 30 Freeway corridor would be an appropriate concept to be explored. The implementation of such a specific plan study would establish specific design guidelines for new development, provide an analysis of the potential opportunities and constraints related to land use and circulation around interchanges, and incorporate City efforts to achieve air quality goals.

Goals, Objectives, and Policies: The goals, objectives, and policies would specify the foundation for what the overlay study is supposed to accomplish and establishes a framework of policies for how specific goals and objectives will be achieved.

Designation of Study Areas: Specific study areas would need to be established in order to clarify policies based on the differing configurations of the freeway alignment (i.e., whether the freeway is above or below grade), and concentrations of certain land use designations.

Concept Plans: The study should include the following component plans:

- A Freeway Overlay Design Plan tying together the implementation of the City's future Image Enhancement Program and General Plan land uses detailing various design concepts for architectural imagery, landscaping, building and off-site signage, and site planning along the freeway corridor and interchange locations.
- A Transportation Management Strategy would provide both technical data regarding traffic circulation around interchange locations and specific methods for the implementation of Transportation System Management along with the designation and preliminary design of car, bus, and vanpool areas and support services.

Development Regulations: Clear and concise development standards to assure consistency with the identified objectives and policies.

Implementation Strategies: A description of the strategies related to the implementation of the study, financing programs, and schedule of priorities.

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Regional Transportation Planning

The following discussion identifies major transportation programs planned for the City or its study area by the San Bernardino Association of Governments (SANBAG), the Southern California Association of Governments (SCAG), or Caltrans.

SCAG Regional Mobility Plan

The Southern California Association of Governments (SCAG) developed a Regional Mobility Plan in 1989 that identifies long-range (20-year) policies and actions to address regional mobility issues. The goal of the Regional Mobility Plan is to recapture and retain the transportation mobility levels of 1984, along with providing specific means to address the goal. Within the Plan are four separate elements: growth management, transportation demand management, transportation systems management, and facility development. As part of the plan, SCAG has set the following goals for local communities within the Riverside/San Bernardino County area:

- To attain and maintain mobility in an environment of rapid population and economic growth.
- To provide sufficient capacity for the transportation demands of people and goods given the adopted growth management forecast.
- To make the region accessible to everyone, including the elderly, the handicapped, and the transit dependent.
- To induce changes in travel behavior that will lower the number of home-to-work trips and increase vehicle occupancy.
- To achieve an efficient balance among all modes, including new technologies.
- To maximize use of existing facilities through the system and demand-management techniques.
- To protect the environment and support the region's plans for managing air quality.
- To support a pattern of development that shortens trip lengths through improved jobs/housing balance.

The Highland General Plan has been developed with SCAG Regional Mobility goals in mind. The implementation of the General Plan's goals, objectives and strategies are designed to incorporate what the residents of Highland feel is appropriate policy to achieve the City's role in regional transportation planning.

*San
Bernardino
County
Congestion
Management
Program*

Assembly Bills 471 and 1791 require either the county transportation commission, or other designated public agency to adopt a Congestion Management Program (CMP). The main focus of the plan is to ensure that regional transportation planning efforts designed to reduce congestion set the standard for each of the cities within the County. In this way, all methods used to predict, model, and assess transportation systems will be consistent throughout the County.

The County Congestion Management Plan is also related other regional planning programs. The most notable of these regional programs is the Air Quality Management Plan for the South Coast Air Basin. Since the CMP seeks to relieve traffic congestion, and traffic congestion relief is one of the strategies of the AQMP, local programs to reduce traffic congestion also reduce reactive organic gases and carbon monoxide from idling vehicles traveling on congested roadways.¹ The program must be prepared in cooperation with the Southern California Association of Governments, regional transportation providers, local governments, California Department of Transportation, and the Air Quality Management District.

Roadways which are part of the proposed CMP system include Highland Avenue from the western city limits to Boulder Avenue; Base Line from the western city limits to Boulder Avenue; Fifth Street from the western city limits to Greenspot Road; Third Street from the western city limits to the intersection at Fifth Street just east of Palm Avenue; along with the following streets from the northern to southern city limits:

- Del Rosa Drive;
- Victoria Avenue;
- Palm Avenue; and
- Boulder Avenue.

The primary elements of the County CMP include:

- Traffic level-of-service standards.
- Public transit service and coordination standards.
- Trip reduction and travel demand requirements that promote alternative transportation.
- Programs that analyze the impacts of local land use decisions on roads, highways, and transit systems.

¹ Making Clean Air a Priority, A Guide for Planners in Local Governments, AQMD, 1990

- Seven year capital improvement program.

The goals of the San Bernardino Congestion Management Program include:

- *Goal 1* - Maintain or enhance the performance of the regionally-significant transportation system, and reduce or minimize traffic congestion on the system.
- *Goal 2* - Assist in focusing available transportation funding on regionally significant facility and service needs.
- *Goal 3* - Provide for technical consistency in transportation system analysis, and coordinate the provision of transportation facilities among neighboring jurisdictions.
- *Goal 4* - Ensure consideration of the impacts of new development on the CMP transportation system, provide means to develop and test measures to mitigate impacts, and provide for adequate funding of mitigation.
- *Goal 5* - Promote air quality and congestion reduction through implementation of land use and transportation, alternatives or incentives that reduce automobile trip making and automobile travel.

Although at the writing of this element, SANBAG has yet to adopt a final Congestion Management Plan for San Bernardino County, the effort thus far is recognized in the General Plan as regional planning efforts in which the City of Highland will need to participate in the future.

As part of the draft implementation program associated with the County CMP, San Bernardino Area Governments (SANBAG) has suggested that local jurisdictions be responsible for implementation of certain portions of the CMP. These responsibilities are summarized below.

System Level of Service Element

Provide input to SANBAG on CMP network additions.

Participate in a task force to study the feasibility and implications defining "transit/TIM emphasis areas" and specifying differential level of service standards for CMP roadways within and outside those areas.

Incorporate adopted LOS procedures into analysis conducted for the CMP.

Land Use/Transportation Analysis Program

Adopt and implement the Land Use/Transportation Analysis Program. The adopted program shall be generally consistent with the SANBAG-adopted program, but variations may be necessary to fit local circumstances.

Act as lead agency for preparation of TIA Reports.

Implement local transportation models or analytical procedures capable of analyzing the impacts of land use decisions on the regional transportation system, both within the jurisdiction and in adjacent jurisdictions.

Submit copies of TIA Reports directly to all other jurisdictions in which project-imposed impacts are identified.

Submit a copy of all TIA Reports to SANBAG and list jurisdictions to which the TIA Report are being sent.

Incorporate consideration of TIA Report results and responses of other jurisdictions on TIA Reports into the land use decision and traffic impact mitigation process.

Participate as needed in discussions on potential interjurisdictional impacts of land use decisions, mitigation of potential deficiencies, and fair apportionment of responsibility for mitigation.

Respond to TIA reports prepared by other jurisdictions and bring traffic impact issues to their attention.

Notify Caltrans and SANBAG of traffic-generating projects (other than single family residences) with a property line in common with a State highway or within 500 feet of a State highway along an intersecting street.

Consider requiring traffic monitoring programs for certain development projects to confirm follow-through of commitments made to the agencies impacted by the development.

Work with SANBAG and other jurisdictions to develop a comprehensive transportation plan for facilities and strategies, and participate in use of the comprehensive transportation planning process to develop a program for financing the area-wide uniform mitigation of impacts of local land use decisions on the regional transportation system.

Trip Reduction and Travel Demand Management Element:

- Work with SANBAG, Caltrans, transit agencies and the air districts to identify CIP projects.
- Submit CIP project proposals to SANBAG.

Monitoring Program, Deficiency Plans, and Transportation Modeling:

- Conduct traffic counts and LOS analysis on an annual basis according to the plan established in the CMP.
- For those segments potentially identified as deficient (LOS drops below the standard), local jurisdiction may conduct travel time runs to confirm the deficiency.
- Maintain existing traffic count information (link and turning movement) in a database that can be easily accessed and shared with multiple agencies.

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- Maintain current land use data as part of ongoing local transportation modeling activities.
- Identify when segments or intersections become deficient and prepare deficiency plans when necessary.
- Plan for the mitigation of future deficiencies through the preparation of corridor or subarea master plans and Traffic Impact Analysis Reports.

It is difficult at this time to fully assess the impacts that the County Congestion Management Plan will have on local planning programs. As with other regional planning programs, such as the Regional Mobility Plan and Air Quality Management Plan, the requirements of the Congestion Management Plan will increase the amount of effort local jurisdictions normally have expended in the past to keep abreast of regional transportation issues. Such an increase may also mean that certain additional traffic improvements could be mandated within the study area for projects that have a regional significance to the transportation system. Overall, the availability of information on a regional basis will provide an opportunity to assess the impacts of local projects on the regional transportation system, and condition projects to meet regional as well as local transportation needs.

Level of Service

Actual operating conditions experienced on a street segment or at an intersection are described by the "Level of Service" (LOS). Level of Service is a qualitative measure of on-street conditions, such as traffic flow and delay. It is described on a scale of A to F, with A representing excellent operating conditions and little or no vehicle delay, while F represents extremely congested conditions and significant vehicle delay. Figure II-B-7 describes Levels of Service for roadways.

Level of Service is one component measure of a volume/capacity (V/C) ratio measurement. The volume/capacity ratio compares actual volume on a street segment or at an intersection to the theoretical maximum number of vehicles that could use the street or intersection during a one hour period. For example, a typical freeway lane can generally carry about 1,800 vehicles in an hour. If the actual volume is 1,200, then the V/C ratio for that lane is $1,200/1,800$, or 0.66; approximately 66 percent of the available capacity is utilized at that location. A V/C ratio of 0.66 corresponds to a Level of Service B, which indicates that there is considerable capacity still available for use by additional traffic volume. A graphic example of the above description is provided on Figure II-B-7.

The County's Draft Congestion Management Plan assumes level of service E as the adopted level of service standard for the plan's traffic network. The County also has established a separate level of service D for rural roadway sections (or lower where such conditions currently exist) and high occupancy facilities. In addition, the County plan makes provisions for "any level of service F facility not to deteriorate further than 10 percent farther than its current numerical level of service value."

The level of service standard for the City of Highland is proposed to be consistent with the County CMP for overall network traffic planning throughout the General Plan study area. This means that at buildout of the study area, the planned roadway capacities would not be exceeded.

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**FIGURE II-B-7
LEVELS OF SERVICE**

	Level of Service	Technical Description			
		Flow Conditions	Operating Speed	Delay	Service Rating
	A	Highest quality of service. Free traffic flow, low volumes and densities. Little or no restriction on maneuverability or speed.	55+	None	Good
	B	Stable traffic flow, speed becoming slightly restricted. Low restriction on maneuverability.	50	None	Good
	C	Stable traffic flow, but less freedom to select speed, change lanes, or pass. Density increasing.	45	Minimal	Adequate
	D	Approaching unstable flow. Speeds tolerable but subject to sudden and considerable variation. Less maneuverability and driver comfort.	40	Minimal	Adequate
	E	Unstable traffic flow with rapidly fluctuating speeds and flow rates. Short headways, low maneuverability and low driver comfort.	35	Significant	Poor
	F	Forced traffic flow. Speed and flow may drop to zero with high densities	<20	Considerable	Poor

SOURCE: CONGESTION MANAGEMENT PROGRAM FOR LOS ANGELES COUNTY, 1991.

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Maximizing Roadway Capacities

The City and its study area contain several undersized and incomplete roadways, and roadways which continually widen and narrow. Future development will result in significant increases in both regional and local traffic volumes. Although new development is generally required to construct adjacent roadways, the existing "pay as you go" system of roadway construction often leaves gaps in the planned roadway system until an area is built out (see also Public Facilities and Services Element for additional information regarding the financing of public improvements).

In response to this anticipated increased amount of traffic volume and congestion and lowering of street capacities throughout Highland, the City may want to consider measures to maximize the capacity of existing roadways, which, in turn, would better accommodate future demands and growth. At a minimum, the following measures may be considered:

- Improve existing facilities.
- Construct and provide future facilities.
- Ensure better relationship of roadways with land uses.
- Promote Transportation System Management and Demand Management Techniques.
- Ensure better interface with affected agencies.
- Incorporate traffic modeling.
- Eliminate on-street parking where feasible by increasing flexibility in parking standards.
- Encourage alternative modes of transit.

Improve Existing Facilities

Roadway segments within areas which are currently operating near or above capacity occur on major arterial sections that have yet to be built to the full major arterial cross-section because of non-contiguous development occurring within the area, or due to some physical constraint of the ultimate right-of-way. ~~Ultimate improvement of these undersized roadway segments to their~~ respective approved rights-of-way would eliminate the widening and narrowing pattern of these segments, and would reduce traffic congestion and increase levels of service and roadway capacities by eliminating bottlenecks.

Another method of improving existing capacities would be to provide better signage, striping and signal synchronization, particularly on those roadway segments currently experiencing capacity problems. These improvements would ensure more efficient traffic flow, which, in turn, reduces traffic congestion. The feasibility of providing the foregoing improvements is based on the City's ability to secure funding to actually construct the improvements. Options available to the City would be to pass portions of the costs to those future development projects which would most affect the improved segments and to establish improvement districts for the affected areas.

Provide for Future Facilities

Roadway capacities could also be improved by providing future facilities which present alternative travel options to the City. The feasibility of providing facilities will be based on the City's ability to secure adequate funding to acquire additional right-of-way area and construct the facilities. In the short-term, the City must protect existing and future rights-of-way to provide the foregoing facilities where applicable.

Ensure Better Land Use Relationships

The land use plan for the City and its study area will be based on several factors. A critical factor will be the ability of existing and proposed transportation networks to support future land uses. Consequently, an effort must be made to logically relate the land uses with affected roadway segments. This could ensure more efficient traffic flow.

There is a need to encourage industrial uses and employment opportunities within the City so as to reduce the number of commutes out of the City. If successful, this could result in reduced traffic on major roadways throughout the City. Secondly, there is a need to route major traffic flows around residential neighborhoods and rural areas. Diversion of traffic would maintain the integrity of existing and future urban and rural residential areas.

There is also a need to minimize, to the greatest extent feasible, the number of direct entries onto regional roadway corridors such as Base Line and Boulder Avenue, from various commercial, residential, and industrial land uses. Minimizing direct access will ensure smoother traffic flow, reduce conflicts, and increase safety on affected corridors and arterials. Shared or reciprocal access to connecting commercial uses could also reduce traffic flow disturbance.

In summary, the City must consider the land use pattern/circulation relationship. Commercial and industrial uses could be developed near freeway interchanges; direct access could be provided from roads which divert traffic from major corridors and arterials. Residential and rural areas would not be directly accessed by major arterials; local streets would carry traffic from arterials into these areas.

The feasibility of ensuring a logical relationship between future land uses and associated circulation and traffic patterns would be based on the City's ability to encourage more employment opportunities within the City and to adhere closely to the land uses designated by the General Plan.

Traffic Modeling

Modeling future traffic impacts generated by the General Plan Land Use Map was conducted using a QRSII computer modeling system. Detailed assumptions and final results of the modeling process have been included in the Appendix of the General Plan. Because the City's circulation system will be required to be consistent with the County's Congestion Management Program, the acceptable level of service (LOS) used in the modeling process was "C" and "D" at the peak hour or the ultimate capacity of the roadway at buildout.

Results of the circulation model indicated that several roadways within the study area would need to be upgraded from the current classification. The findings associated with the modeling effort are summarized as follows:

- Palm Avenue north of Base Line will experience congestion due to the narrowing of the roadway as proposed. Traffic impacts in this area would indicate that widening is necessary. The historic nature of the area, however, precludes such action.
- Base Line between Church Avenue and Boulder Avenue, and Fifth Street from Del Rosa Avenue to Boulder Avenue are projected to require six lanes of traffic. This is primarily due to the proximity of these streets to the freeway and proposed commercial land uses in the area around the Air Force Base. Knowing that the need for these rights-of-way will occur in the future, the opportunity to obtain right-of-way would be most logical now, as new development occurs in the area.
- Eucalyptus Avenue east of Boulder Avenue will also need to be upgraded from a collector to a secondary highway due to the increase in traffic volumes and proximity to planned commercial development.
- Additional improvements may be needed along Sterling Avenue north of Base Line and Base Line west of Palm Avenue. Since much of the street width for Sterling Avenue outside the City boundaries provides for only four travel lanes widths within the City are proposed to be consistent. The level of service on Base Line just west of Palm Avenue may also exhibit the need for widening in the future, although it is more likely that as levels of service near this intersection decreases, motorists will use alternatives such as Ninth Street to supplement east/west circulation.

Continuing traffic modeling efforts such as were completed as part of the General Plan process could also be used as a benchmark system to better plan for future needs. If such a system can be easily coordinated with regional efforts to reduce congestion, land use decisions could take into consideration the effects individual projects will have on both the regional and local street network. This type of system could be used to indicate development proposals which might be enhanced through the use of transportation management measures or are in need of additional transportation improvements.

Interface with Affected Agencies

It is recognized that freeway improvements and expanded service would require cooperation of and implementation by several agencies, such as San Bernardino County, City of San Bernardino, and particularly Caltrans. Continued interface with these agencies to develop plans, implementation strategies, and funding options will enable the most effective regional and local facilities and improvements necessary to accommodate existing and future development in the City and its study area.

Parking

The availability and distribution of parking facilities throughout the community has a profound effect on the efficiency of all land uses in the study area. This is especially true for the commercial and industrial uses located along Highland's major commercial and industrial corridors. Such uses have been historically dependent on-street parking to supplement the lack of on-site parking lots. Since new development must rely solely on the provision of on-site parking, older sites which are parking deficient add to the congestion of the street network by forcing consumers, employees, and service workers to park within the public right-of-way. The following discussion provides examples of how older commercial and industrial development can enhance their ability to provide required parking without sacrificing existing building square footage.

Parking Lot Consolidation: The consolidation of parking facilities is often suggested as a method for the purpose of traffic system management. The concept involves the reduction of the number of driveways by grouping parking facilities together and using common on-site drive aisles to create an internal circulation pattern. This reduces the amount of autos which would otherwise use the public street to drive from one nearby business to another. Valuable land area normally dedicated to property line screen walls and landscaping can be devoted to additional parking facilities to benefit adjacent users. This concept could be used in combination with the corridor improvement concepts discussed in the General Plan Land Use Element in areas such as Base Line in order to provide older development with more on-site parking.

Variable Parking Standards: The enforcement of an inflexible parking standard throughout the study area may prove to be a disincentive for owners of older or highly constrained land uses to redevelop their properties. This is especially apparent along Base Line, where commercial uses built with substandard parking areas are unable to increase the number of parking spaces if required to as part of a building improvement. The historic Highland Townsite is another portion of the study area where parking is deficient, or on street parking has been sacrificed to the movement of traffic through the area.

The concept of designating specific parking overlay areas or districts which include special variable standards for the provision of parking, may serve as an alternative to identifiable areas with parking shortages within the study area. Potential locations for such parking districts along with the specific issues to be addressed in these areas are summarized in Table II-B-1.

Special Parking Districts: Used as a funding mechanism, the establishment of Special Parking Districts within the study area can be used to ensure adequate parking supply is available in areas which otherwise would be parking deficient. One example might be to establish a Special Parking District within the Highland Historic District. If approved by business land owners and residents within the district, money could be generated for the improvement of City parking areas to serve the local business and relieve local residents of overflow nonresident parking.

For additional information regarding Special Districts, please refer to the Public Services and Facilities Element.

**Table II-B-1
Variable Parking District Concepts**

Parking District	Existing Condition	Variable Parking District Concepts
Base Line	• Existing parking deficient uses. • Inability to expand existing parking areas. • Shallow commercial parcels. • In order to increase traffic flow, parking on the street may need to be eliminated. • Individual parcel driveways force patrons to use street for circulation.	• Provide variable standards for parking deficient uses for improvements up to 50% of the existing structure. • Allow the leasing of parking spaces of adjacent parking abundant uses up to 25% of the parking requirement. • Consolidate driveways with adjacent uses to allow for circulation between parcels and increase opportunities for complete on-site parking circulation.
Highland Historic Village District	• Limited on-street parking due to need for through street circulation on Palm Ave. • Historic buildings were required to provide only on-street parking. • Commercial uses have little separation and buffering from adjacent residential parcels; parking has the potential to overflow into adjacent neighborhoods.	• Provide public parking facility to replace on-street parking. • Increase width of pedestrian sidewalks along storefronts and provide defined pedestrian linkages to public parking facility to enhance pedestrian safety. • Restrict commercial parking within adjacent residential parcels using parking district sticker program for local residents.

Management of the Parking Supply: In addition to the ability to provide new parking facilities or enhancement of existing facilities, the City has the ability to restrict the use of public parking in an effort to ensure adequate parking supply. Typical restrictions include metered parking, monthly parking stickers for designated areas, and curb designations for loading, waiting, or passenger pick-up areas.

The City may also encourage private business to provide incentives to employees to reduce the amount of work trips which are generated by the company. Typical incentives might include preferential employee parking; reserved carpool and vanpool spaces near entrances or exits of the parking lot, or near the employee entrance; if parking fees are imposed, carpoolers and vanpoolers could receive a discounted parking rate or none at all.

Bicycle Trails

Bicycle, pedestrian and equestrian trail concepts encourage study area residents to use non-vehicle related transportation alternatives. The major goals used in the implementation of such a system integrating the needs of bicycle, pedestrian and equestrian users include:

- Allowing for shared trail rights-of-way while providing a separation of distinct trail uses.
- Providing connective links to schools, civic and neighborhood centers, and major shopping and employment areas, and other multipurpose trails.
- Providing safe alternatives to congested through streets while maintaining the safest, most direct route to community facilities and regional trail systems.
- Allowing for the provision of interim trail system links which can be used until future master plan trails are constructed.

The proposed Highland Bike Trail System identifies bike paths by the following three classifications, according to the degree of exclusiveness with which the paths are preserved for bicycle use. The designation as Class I, II, and III should not be construed as a hierarchy of bikeways. Each class of bikeway has its appropriate application and may include other alternative transportation use such as hiking, equestrian and pedestrian modes (see Multi-Use Trails). Identification of each trail section by location, function and description can be found in Figure II-B-8.

Bike Trail Classifications:

- ***Class I Bike Path:*** A Class I Bike Path serves corridors which are not served by streets and highways or where wide rights-of-way exist, permitting such facilities to be built with a separation from roadway traffic. These alternative transportation routes may serve a variety of users. The bike paths can provide recreational opportunities for bicycle, equestrian and pedestrian users, or in some instances, may serve as high speed commute routes where vehicle cross traffic can be minimized.

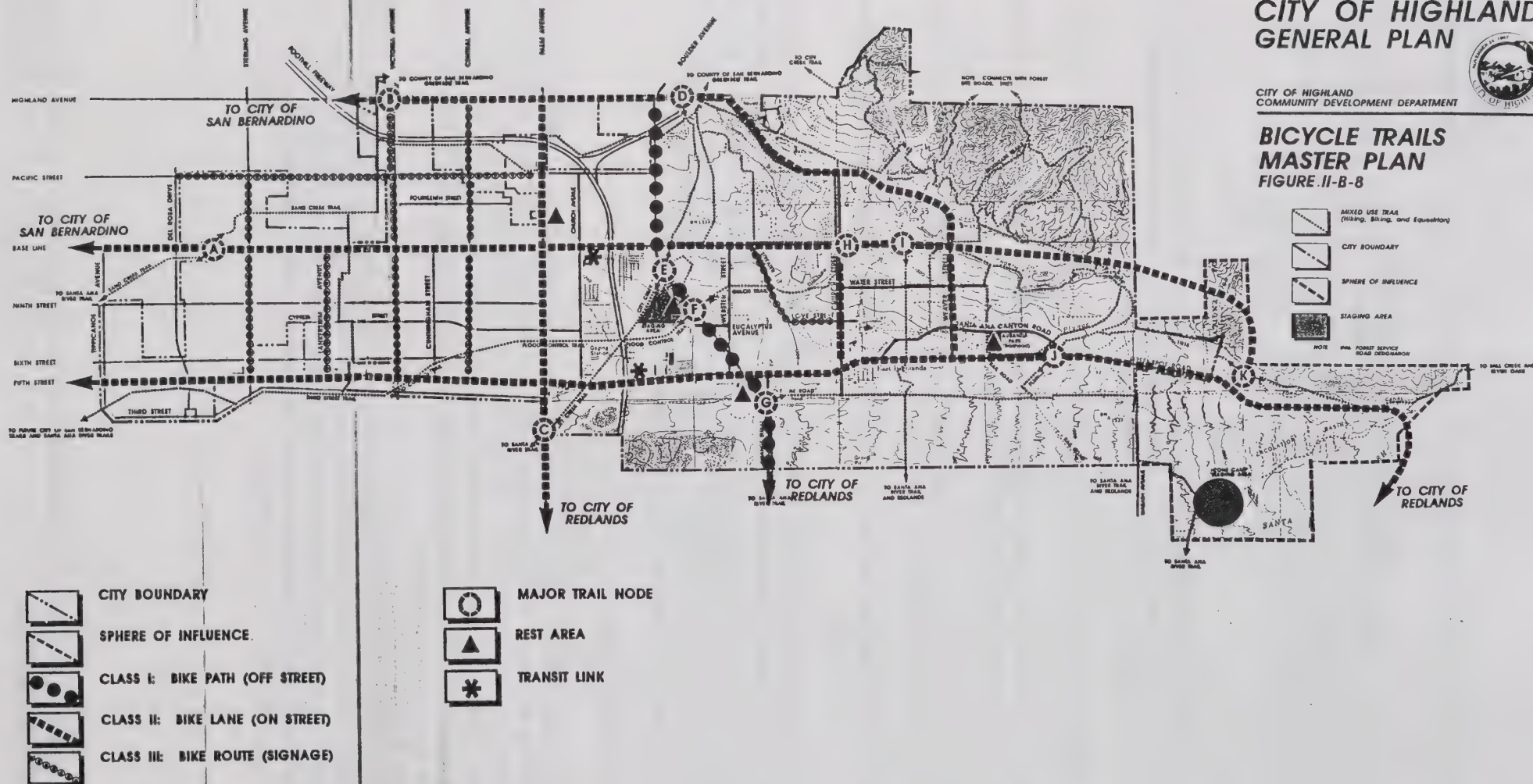
Existing opportunities for the designation of bike paths in the City of Highland is somewhat limited, since street rights-of-way have been reserved mostly for the movement of vehicular traffic. It may be possible, however, to include bike paths with rights-of-way which are yet to be developed or those which have unique characteristics. Such opportunities may exist in the following locations within the study area:

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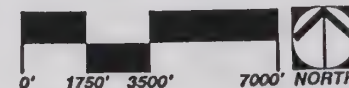
BICYCLE TRAILS MASTER PLAN FIGURE II-B-8



SOURCE: PLANNING NETWORK, 1992.

PLANNING NETWORK

II-B-43



- **Boulder Avenue:** Upon completion of the 30 Freeway, Caltrans expects to relinquish Boulder Avenue as a State Highway. Rights to access along Boulder Avenue, originally controlled by Caltrans, could be maintained by the City in order to restrict driveway access along the street. Since auto/bicycle conflicts are of primary concern when designing a Class I bike path, the ability of the City to control the number of access points along Boulder Avenue would make this street a logical choice for such an off-street trail.
- **Greenspot Road:** The Greenspot Road corridor has been planned by a number of agencies for use as a regional trail link. The proposed county greenbelt trail system designates Greenspot Road as a likely link between the Santa Ana River Trail System, and the City of Redlands Bicycle Trail Plan. Since this unique corridor offers users certain scenic benefits not found in the rest of the City, and has been designated as a vital link in several planned trail systems, it would be logical to protect the opportunity for the construction of a Class I bike path along Greenspot Road.
- **Class II Bike Lanes:** Class II Bike Lanes are intended to delineate the rights-of-way assigned to bicyclists and motorists, and to provide for more predictable movements of each. Bike lanes of this class may also help accommodate bicyclists through corridors where insufficient room exists for safe bicycling on existing streets. This can be accomplished by reducing the number of lanes, prohibiting parking on bike lane streets, or striping (see street standards for bike lanes, Figure II-B-9). This class of bikeway links the bike paths to provide a designated system for bicycle commuting to major destination points and regional trails system.
- **Class III Bike Route:** Class III Bikeways are considered shared facilities, which serve either to provide continuity to other bicycle facilities, or designate preferred routes through high demand corridors. Such bikeways are designated using signage along the roadway without special street striping (see proposed bikeway map, Figure II-B-8).

In addition to the designated bike trails, the proposed system includes designations for the following trail support components:

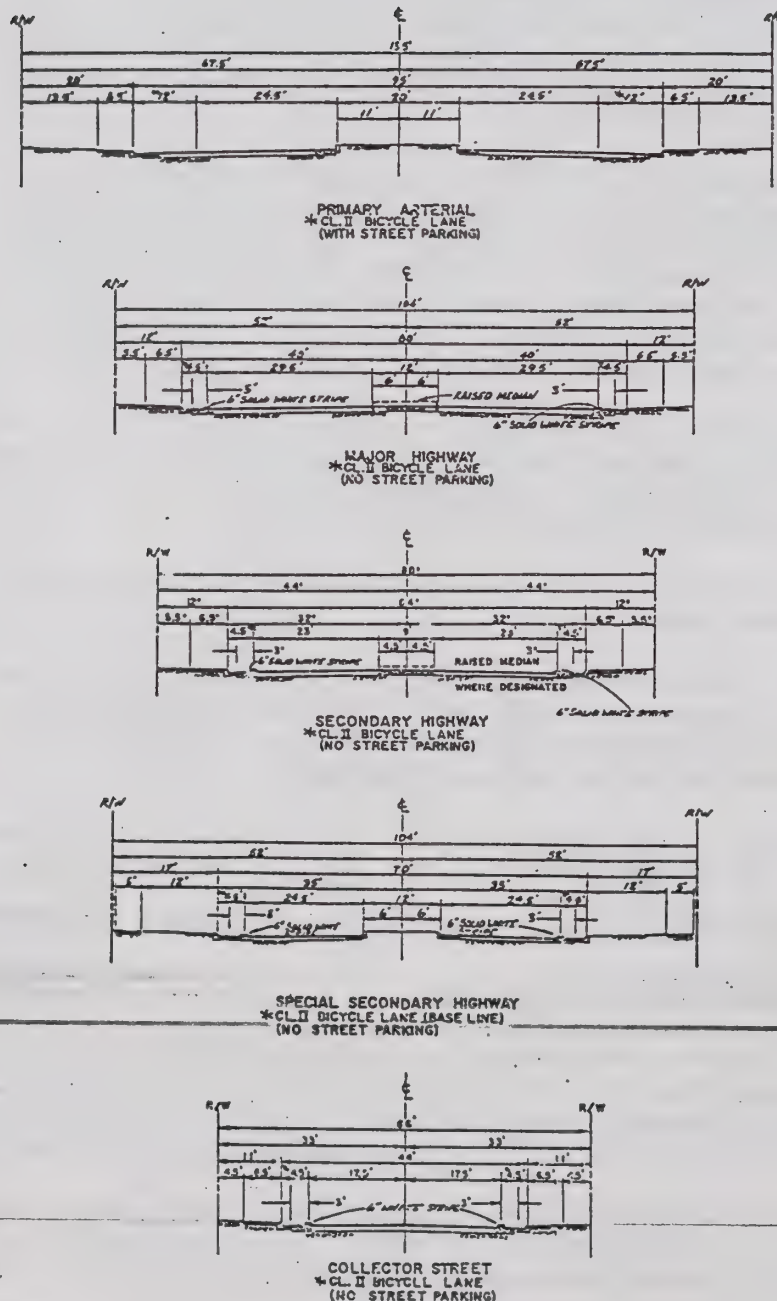
- **Trail Node:** Trail nodes occur at specified intersections of the bike trail system and the multi-use trail system. The trail nodes identify points at which trail users are provided opportunities to take connecting links to both local and regional trail systems (see Figure II-B-8). In addition, trail users would be provided with information including:
 - an overall local trail system diagram showing trail links to regional systems, major activity areas in the City, local landmarks, along with recreational opportunities;
 - interpretive information about local scenic resources visible from the trail node; and
 - informational tips on bicycle safety.
- **Rest Area:** Rest areas are placed near multi-use trail staging areas to provide appropriate facilities geared to long distance trail users. Facilities to be developed in these areas include bicycle racks, picnic benches, shade structures or trees, bathrooms, and water fountains. Where feasible, secure parking facilities should be provided in combination with multi-use trail staging areas.
- **Transit Link:** In an effort to comply with air quality requirements, an area for bicycle commuters who bike to and from park and ride facilities has been designated. This facility would be designed in concert with park and ride facilities to include secure bicycle lockers, benches, rest and shade areas.

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FIGURE II-B-9 BICYCLE TRAIL STANDARDS FOR ROADWAYS



SOURCE: C. G. ENGINEERING, 1992.

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Transportation System and Demand Management

Transportation System Management (TSM) strategies are generally low-cost actions intended to enhance the mobility and general efficiency of the highway system. Examples of TSM strategies include:

- traffic signal synchronization;
- freeway ramp metering and bypass lanes;
- removal of on-street parking;
- improved intersection geometrics; and
- high-occupancy vehicle (HOV) lanes.

Transportation Demand Management (TDM) involves strategies to mitigate traffic congestion and/or air quality problems by moving traffic more efficiently to make maximum use of the existing system. TDM actions include a variety of low-capital investment strategies to improve transportation service by making more efficient use of the highways and transit systems already in place and by reducing the need for new capital investments and transit operating assistance. In general TDM include techniques to: (1) make better use of the existing road space, (2) reduce auto usage in congested areas or time periods, and (3) increase transit ridership through improved transit service and efficiency. TDM alternatives include, but are not limited to:

- *Ridesharing:* Ridesharing is a general term used to describe commute modes involving two or more people traveling together in a private vehicle. Carpools, vanpools, and buspools are all typical examples of ridesharing.
 - Carpools appeal to commuters who do not require the use of their personal vehicles for travel during the workday.
 - Vanpools usually carry anywhere from eight to fifteen people and have a stronger appeal for commuters with an average commute time of one hour or more round trip. Vanpools can be company-owned, company-subsidized, or privately owned.
 - Buspools may involve either a licensed company or an owner-operator servicing a private route for larger groups of passengers for a fixed monthly fare.
- *Public or private transit:* This option includes regularly scheduled services on designated routes (like bus or light rail), as well as para-transit services, which are specialized to meet the needs of seniors and physically challenged citizens.
- *Alternative work hours:* Alternative work hours achieve a reduction in the most congested part of the day by changing the times which employees start and stop work. Flexible schedules (flextime), staggered shifts, 40 hours in 4 days (4/40), and 9 hours a day with an extra day off every other week (9/80), are examples of alternative work hours programs.

- *Telecommuting:* Telecommuting refers to work that is performed at a location that is different from the usual place of business. Employees may work at a satellite center established by the company, at a for-profit center close to home that leases space and facilities, or at home via the telephone, fax, or home computer. Telecommuting is usually a part-time option, but it can reduce commute time, mileage and fuel expenses and the overall number of commute trips.
- *Bicycling and Walking:* Often referred to as "healthy commutes," bicycling and walking offer the opportunity to exercise while commuting to work. These options are appropriate for people who are fairly close to their workplace or other destination. For additional information on the Highland Bicycle Trails Master Plan, please refer to page II-B-8 of this Circulation Element.

Strategies to encourage these alternatives include:

- community traffic management programs;
- rideshare matching assistance;
- parking control strategies;
- financial incentives for ridesharers;
- preferential parking locations for van and carpoolers;
- furnishing information on alternative modes;
- operation of vanpool programs or transit services;
- disincentives for drive alone commuters; and
- facilities at employment sites, such as bicycle racks, carpool drop-off locations, etc.

TDM is a means of more efficiently utilizing transportation infrastructure and services by reducing the number of vehicles used to satisfy commuting needs. TDM is not a substitute for other transportation improvements, but, rather, it complements the range of circulation improvements identified in the General Plan. Additionally, TDM strategies can help alleviate congestion on roadways during the actual construction and provision of future roadway improvements.

Transportation Demand Management (TDM) can be most effective if implemented by future tenant-employers in conjunction with building managers. Tenant-employers could have the greatest influence on the commute behavior of employees by affecting their work hours, benefits, and other policies and programs. Therefore, many trip reduction alternatives encouraged by TDM can be placed on tenant-employers. It should be noted that all large tenant-employers (with 100+ employees) in the South Coast Air Basin are now required to develop and implement trip reduction programs in compliance with the South Coast Air Quality Management District's (SCAQMD) Regulation XV. It is anticipated that this, or similar regional requirements, will soon apply to smaller tenant (25+ employees) and/or multi-tenant buildings. Therefore, TDM is already being practiced in Southern California. Future developers will be required to comply with established SCAQMD regulations and appropriate TDM requirements.

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Transportation Demand Management Goals

Regardless of the land use plan for the City and its study area and associated circulation improvements, most roadways will experience congestion to some level. In recognition of this, the following general goals can be established to ensure that TDM alternatives and strategies are enacted:

- Increased traffic levels generated by new development can be mitigated by developers and property owners to the greatest extent feasible through transportation system management strategies aimed at reducing the number of peak period trips.
- TDM strategies can be implemented to provide immediate relief from congestion in anticipation of future circulation improvements.
- Provisions of the regional Air Quality Management Plan that pertain to the City of Highland can be partially addressed through TDM requirements placed on new development within the City and its study area.
- Future developer and property owner requirements can be aimed at instituting TDM programs at new employment sites in anticipation of the need for tenant-employers and building managers to comply with SCAQMD's Regulation XV.

Implementation of Transportation Demand Management

TDM will be most effective in potential future business and industrial parks and larger employment centers. The City may want to consider the feasibility of establishing a Transportation Management Association (TMA), which would act as the lead for implementing and enforcing TDM programs. The association would oversee TDM programs established for future developments such as business and industrial parks, and future developments which have tenant and employer relationships. TMAs would be proactive organizations formed so that tenant-employers, developers, building owners and managers, local government representatives, and others could work together to collectively establish policies, programs and services to address local transportation problems. TMAs could also provide coordinated, centralized TDM services to member firms and organizations. The economies of scale to be gained in pooling resources and commuter information could be a very effective means for developers, property owners, and tenant-employers to comply with established local or regional trip reduction requirements.

If the City of Highland deems it necessary to implement a TDM program, in addition to the specific requirements on individual developers and property owners, a Transportation Management fee may be imposed on all new development in order to fund such a program. The amount, incidence, and procedures for collecting the Transportation Management Impact Fee would be determined at the time of its imposition and would be based on the direct costs of designing and implementing a program for the potential development area.

In addition to the impact fee, if appropriate, future developers and/or the City may want to prepare or provide the following:

Circulation

- *Funding and Implementation Plan:* All future work sites with more than 100 employees would provide an estimate of the start-up and on-going costs associated with TDM plan implementation. The sources of the funds to pay for these costs would also be listed.
- *Monitoring and Evaluating Plan:* Vital to the success of any TDM program would be the tracking of its progress. If one ridesharing mode becomes unpopular and another very popular, more effort should be applied to the popular mode. Monitoring and evaluating the commuting habits and attitudes would be very valuable to the program. Therefore, the tools and strategies to monitor and evaluate the first year's program could be included in the first year's plan. Subsequent plans would include a monitoring and evaluation report stating the progress and shortfalls of the program. It would be important to also include a summary of the TDM program, its effectiveness, and its future direction.
- *Employee Transportation Coordinator:* Each future work site could provide at least one coordinator who would be responsible for plan preparation and implementation.

Regarding enforcement, failure to submit or provide the foregoing could result in the denial of the Certificate of Occupancy or business license for any proposed project under Regulation XV, if the City desired. All future developers and the City must make significant effort towards the goals of the TDM program for the program to be effective.

Designation of Truck Routes

Existing Truck Routes

Although designated truck routes throughout the City are limited to major City arterials, the existing inconsistent pattern of land use in some areas has caused commercial truck traffic to be routed through existing neighborhoods. This situation has created problems in areas where the existing land use pattern is a mix of industrial and residential. Examples of where such situation are present include Fifth Street west of Victoria Avenue, Fifth Street and Mines Street corridors near the intersection of Palm Avenue, Victoria Avenue between Fifth Street and Ninth Street, and the Fifth Street and Boulder Avenue area. Implementation of the proposed Land Use Map contained in the General Plan will provide a more homogeneous land use mix, which will ultimately separate industrial and heavy commercial uses from residential areas. However, the projected future development of industries and employment opportunities, and increased traffic volumes will create the need for designated truck routes for specified alignments to ensure that congestion created by trucks will be controlled to the greatest extent feasible.

Figure II-B-10 indicates possible alignments which may be considered for future truck route designations. Each of these alignments traverse through and provide links between designated industrial and commercial. For example, Victoria Avenue and Fifth Street provide access to activities which may be planned for the reuse of the Norton Air Force Base. Fifth Street, Base Line, and Palm Avenue provide circulation both into industrial areas and provide connections to the freeway.

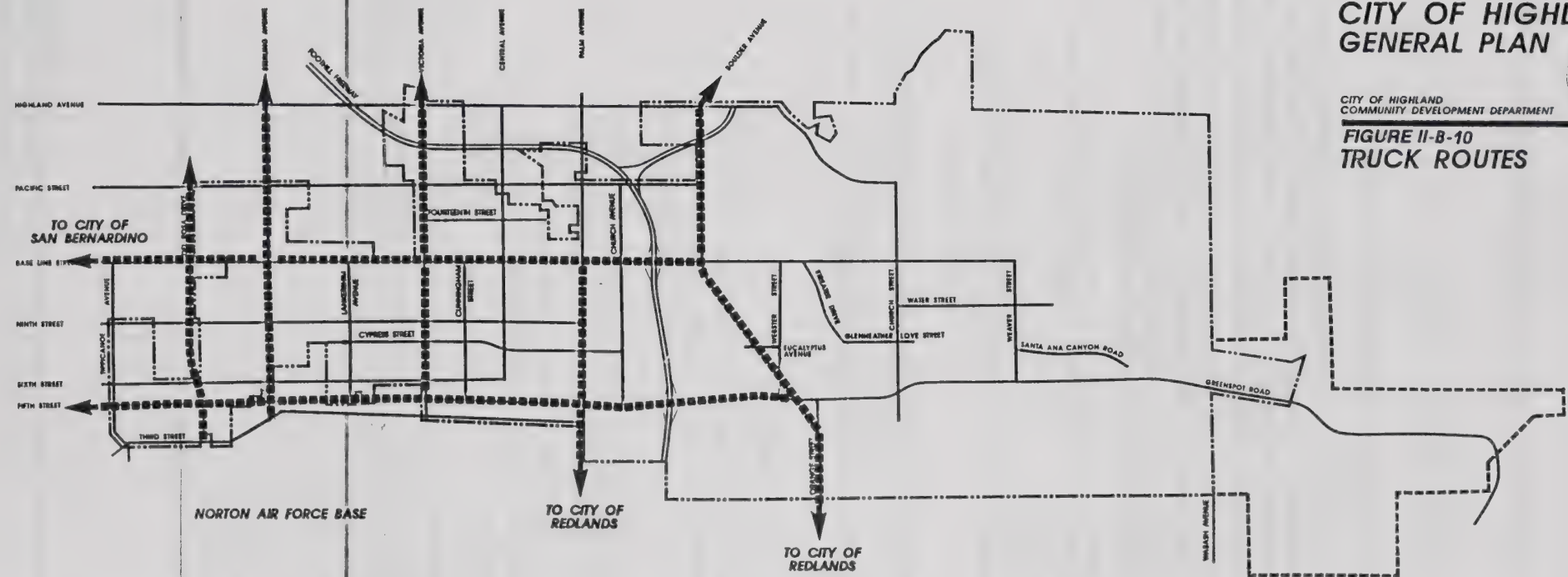
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CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-B-10
TRUCK ROUTES



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  TRUCK ROUTES

SOURCE: PLANNING NETWORK, 1992.

PLANNING NETWORK

II-B-49



Gravel Haul Roads and Freeway Access

With the existence of mineral extraction activities within the Santa Ana River Wash area comes the issue of transportation of raw materials from quarry sites to processing facilities, and in some cases, the transportation of finished product (i.e., sand, gravel, and concrete products) to the ultimate consumer. Prior to incorporation, mining operators were free to use roads which led directly to the nearest major transportation corridors. Since the area has grown in population, residents have become sensitized to the movement of these materials, thus causing a circulation nuisance issue. In response to this issue, the City has encouraged the development of optional plans for the movement of both raw and finished materials. The overall goals of each option include:

- Providing for the transport of raw and finished aggregate and concrete products via major regional transportation corridors.
- Ensuring the safety of motorists on City streets by reducing the number of heavy truck trips to a minimum.
- Maintaining improvement standards on truck route designations to accommodate truck travel.
- Ensuring confirmed maintenance of city roadways adversely impacted by heavy truck traffic.

**Table II-B-2
Mineral Extraction Haul Road Options**

Option One

Construct haul road to be completely contained within the boundaries of the existing quarry activities, limiting access to the 30 Freeway via a modified interchange on-ramp at Fifth Street.

Advantages

Entire haul road can be built as a temporary facility.

No public access.

No auto/truck mix.

Road location and alignment may be changed due to quarry operations and conditions.

Disadvantages

Interchange at Fifth Street and the 30 Freeway will need to be modified to accept alternative entrance and exit areas.

Option Two

Establish new public street along the northernmost boundary of the Santa Ana River and construct a new interchange at the 30 Freeway to serve both truck and auto circulation.

Advantages

New interchange would be constructed enhancing access to the Freeway.

Truck traffic would be diverted south of the study area.

Disadvantages

Road would be required to be public, creating the potential for auto/truck conflicts.

Cost of building new interchange.

Haul road would be required to be built through Santa Ana River Wash.

Traffic impacts may be created in the City of Redlands.

Table II-B-2
Mineral Extraction Haul Road Options

Option Three

Accept traffic from private haul roads within the quarry onto Orange Street and route truck traffic to the 30 Freeway via Boulder Avenue and Fifth Street.

Advantages	Disadvantages
Least amount of impact to existing quarry operations.	Auto/truck conflict.
Interchange improvement costs minimal.	Loaded trucks may cause increased public maintenance costs on City streets.

*Highland
Historic
District
Circulation*

Along with the designation of the Highland Historic District, the City of Highland indicated the desire to retain the existing structures in their original historic context. Circulation modeling completed as part of the General Plan program recommended that Pacific Avenue and Palm Avenue be expanded throughout the district beyond the existing right-of-way, and impacting the historic integrity of some buildings located in the historic district. The trade off between the preservation of the areas historic buildings and the necessity to move traffic through the area creates a need to investigate innovative circulation options. Table II-B-3 presents a description of possible circulation options which should be considered for the Highland Historic District.

Table II-B-3
Highland Historic District Circulation Option

Circulation Option	Concept
Parking Restrictions	Eliminating parking along both streets allows for the potential to increase in travel lanes without increasing road width. It should be noted that although such a concept would increase traffic flow through the area, many of the commercial parcels in the district rely on the availability of on-street parking. Concepts in the Land Use Element related to flexible parking standards which allow for the development of off-site parking facilities should be used in conjunction with this option.
Reversible Travel Lane	This option would provide two lanes of opposite traffic flow through the area (one in each direction) with a center lane that could change direction to accommodate peak congestion.
Reduction of Driveways	Reducing driveways along the street reduces the number of potential interruptions of the traffic flow on the street. Combining access to several parcels in one location would, therefore, increase traffic flow through the district.
Non Traditional Lane Widths	Restriping the existing right-of-way with smaller lanes would increase the amount of vehicles able to travel through the district. This option could also be implemented with any of the other options in order to increase their efficiency.
Specialized Intersection Treatments	Intersection improvements such as right hand turn pockets, and specialized signal timing, could be developed without disrupting the historic pattern of development since a majority of the right-of-way through the district would remain unaffected.

Source: Planning Network, 1992.

Scenic Roadways

The existing roadway system is primarily designed to be an efficient circulation system designed to move people and goods. Enhancement and viewing of aesthetic and scenic resources were not factors which contributed to design of the existing roadways.

Scenic resources within the City and its study area include unique visual features that provide attractive views within or from the study area. Major visual resources include topographic features, local flora, archaeological sites, and historic buildings. In general, views of local topographic features, such as the San Bernardino Mountains or the Santa Ana River area, should be considered in any roadway design. Roadway development in the north/central part of the City must be sensitive to existing, and potentially significant, historical resources included in the historic Village District. These resources are considered assets and amenities of the City. Consequently, the City may want to encourage those types of roadways which carry greater traffic volumes to be constructed along alignments which would have undisturbed views of the scenic resources.

Because of their importance as community resources, the City may want to consider improving scenic opportunities along the following roadways: Boulder Avenue, Base Line, and Palm Avenue. In addition to these proposed scenic routes, the following local roadways also should be considered as potential scenic routes, due to the significance of resources which can be viewed from these roadways: Greenspot Road, and Base Line (from Boulder east to Weaver Street).

An integral component of the City's future Image Enhancement Program (see the General Plan Land Use Element), the designation of scenic roadways would give the City an opportunity to:

- add continuity and cohesiveness between the different community districts;
- provide a unique and distinct image for the City;
- provide the catalyst to tie alternative transportation modes together, saving energy and natural resources;
- establish the composition of viewshed corridors throughout the City; and
- offer examples of a wide variety of design applications.

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 1: To provide for a balanced transportation system that meets the needs of current and future residents and ensures the safe and efficient movements of vehicles, people, and goods throughout the City.					
Objective 1.1: <i>Provide a transportation system that provides the capacity necessary to accommodate the levels and types of traffic to be generated by the land use plan.</i>					
1.1.1	Plan for the provision of a variety of street classifications specifically designed to serve the various traffic needs in the area, including major highways, primary highways, collector streets, industrial collectors, and local streets.	Adoption of General Plan - Ongoing	Enhancement of Existing Program	Public Works	Department Budget, Development Fees
1.1.2	Limit direct private property access to arterials to maintain a desired quality of flow.	Ongoing	New Program	Public Works	Department Budget, Development Fees
1.1.3	Design each arterial and its terminal facilities, including parking, with sufficient capacity to accommodate anticipated traffic based on intensity of projected and planned land use.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget, Development Fees
1.1.4	Regulate the intensity of land use to keep traffic on any arterial in balance with roadway capacity.	Ongoing	New Program	Public Works	Department Budget, Development Fees
1.1.5	Design and employ traffic control measures to ensure city streets and roads function as intended.	Ongoing	Existing Program	Public Works	Department Budget
1.1.6	Provide safe operation of rail service, truck/auto/bus traffic, pedestrian, bicycle, and other modes by adhering to national standards and uniform practices.	Ongoing	Existing Program	Public Works	Department Budget
1.1.7	Coordinate street system improvements and signalization with regional transportation efforts.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.8	Coordinate signal construction and timing with Caltrans improvements in and around Highway 30 off and on-ramps.	Ongoing	New Program	Community Development, Public Works	Department Budget

Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
1.1.9	Make reasonable efforts to maintain volumes at Level of Service "C" or better on local streets wherever possible.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.10	Locate new development and their access points in such a way that traffic is not encouraged to utilize local residential streets and alleys for access to the development and its parking.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.11	Work with OMNITRANS to locate and construct bus turnouts along appropriate arterials in areas which implement both local and regional congestion management and air quality goals.	Initiate formal contact 48 months post General Plan adoption - then Ongoing	New Program	Community Development, Public Works	Department Budget, Transportation Grants and funds as available
1.1.12	When designing intersections adjacent to Route 30 take into consideration ramp and freeway capacity.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.1.13	Investigate the implementation of Variable Parking District Overlays along Base Line, Highland Historic District, and other areas where appropriate, to encourage the enhancement of existing parking deficient development.	Investigate implementation 36 months post General Plan adoption	New Program	Community Development	Department Budget
1.1.14	As part of a focused evaluation of east end circulation within the General Plan study area, investigate the necessity of the following potential road alignments: • Base Line extension to Greenspot Road • Provision of a roadway link connecting the City's end circulation system to that of the City of Redlands to the south. If it is determined that such revisions to the east end circulation system will be needed, develop an implementation strategy which includes roadway alignment feasibility studies, design cost estimates, and funding programs that identify how costs will be allocated between those who benefit from the improvement.	Complete investigation one year post General Plan adoption	New Program	Community Development, Public Works Department	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Objective 1.2: To provide a network of transportation facilities that ensure safe and efficient movement of vehicles, people, and goods throughout the City.					
1.2.1	Provide terminal facilities for inter-city and regional travel by public and private transportation modes, as necessary.	Ongoing	New Program	Community Development, Public Works	Department Budget, Transportation Grants and funds as available
1.2.2	Continue to support the regional bus system to provide intra-city service, inter-city service to major employment centers, and connection to regional transportation transfer points.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget
1.2.3	Plan for the provision of areas within the City to be used as a park-and-ride regional bus and car pool facilities.	Ongoing	Existing Program	Community Development, Public Works	Department Budget
Objective 1.3: To encourage an improved citywide public transit system that provides mobility to all City residents.					
1.3.1	Coordinate transit planning with the Southern California Association of Governments, the San Bernardino County Transportation Commission, the Southern California Rapid Transit District, Omnitrans, and adjacent communities.	Ongoing effort as part of the Regional CMP process	New Program	Community Development, Public Works	Department Budget
1.3.2	Recognize private transportation services (taxis, vans, buses, and limousines) as an integral part of public transportation.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.3.3	Coordinate with human service agencies and public schools to reduce duplicate transportation where feasible.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.3.4	Require, where appropriate, new development to provide transit facilities, such as bus shelters and turnouts, consistent with anticipated demands.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.3.5	Work with Omnitrans to ensure that transit services are extended to serve residents in the eastern portion of the study area.	Request service upon adoption of the General Plan, and then ongoing	New Program	Community Development, Public Works Department	Department Budget
1.3.6	Ensure accessibility of disabled persons to public transportation.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.3.7	Encourage major employers to reduce vehicular trips by offering incentive concepts discussed in the General Plan Circulation Element, including but not limited to reduced transit passes, and preferential parking for ridesharing.	Ongoing effort as part of TDM goals	New Program	Community Development, Public Works	Department Budget, Development Fees
1.3.8	Investigate new opportunities to further finance demand/response transit service for the elderly, handicapped, and recreational purposes.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
Objective 1.4: To protect and encourage non-motorized transportation such as bicycle and pedestrian routes.					
1.4.1	Using the concepts outlined in the General Plan Circulation Element, establish a citywide bicycle and pedestrian Master Plan and Design Standards.	General Plan adoption	New Program	Community Development, Public Works	Department Budget
1.4.2	Encourage new development to provide pedestrian paths and linkages through projects.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.4.3	Encourage new development to provide reasonable and secure space for bicycle storage.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.4.4	Plan routes that are accessible for disabled persons and that link public facilities and commercial areas to residential neighborhoods. The use of audible traffic signals along this route should be considered.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.4.5	Provide bicycle racks at all public facilities and along major public streets.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.4.6	Assure that local bicycle routes will complement regional systems and be compatible with routes of neighboring municipalities.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.4.7	Utilize easements and/or rights-of-way where feasible along flood control channels, public utility rights-of-way, railroad rights-of-way, and street rights-of-way wherever possible for the exclusive use of bicycles, equestrian, and walking/hiking trails.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.4.8	Encourage the development and maintenance of pedestrian and equestrian trails in East Highlands.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.4.9	Maintain all pedestrian trails in a neat and orderly manner through an active program of weed abatement.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
<i>Objective 1.5: To provide a circulation system that reduces conflicts between commercial trucking, private/public transportation, and land uses.</i>					
1.5.1	Maintain designated truck routes for use by commercial trucking that link industrial and commercial activity areas with major roadways and regional transportation routes and minimize impacts on local traffic neighborhoods.	Ongoing	New Program	Public Works	Department Budget
1.5.2	Provide appropriately designed roadways for the designated truck routes that can safely accommodate truck travel.	Ongoing	New Program	Public Works	Department Budget
1.5.3	Develop berms and barriers where feasible along truck routes to minimize noise impacts to sensitive land use.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.5.4	Provide sufficient loading areas to minimize interference with efficient traffic circulation.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.5.5	Regulate on-street parking of trucks where necessary to discourage truck parking on primarily residential streets or where they are incompatible with adjacent land uses.	Ongoing	New Program	Community Development, Public Works, City Council	Department Budget, Development Fees
1.5.6	Conduct a study examining the interface between proposed truck routes, the complete roadway network, and adjacent land uses.	Complete study 24 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget
1.5.7	As part of the development code updates, review the zoning ordinance to evaluate the appropriateness of current standards for truck parking and loading facilities.	Ongoing	New Program	Community Development	Department Budget

Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
1.5.8 Require as a part of the development review process for all new or the expansion of existing mineral extraction activities within the City, that the following information be provided: • a detailed plan of haul roads, which indicates measures which will be taken to minimize aesthetic, noise, traffic, and particulate emission impacts to the surrounding land uses; • a traffic analysis which indicates both the number of projected trucks and their associated potential impact to city streets; • a "fair-share" mitigation analysis indicating the impacts and associated maintenance costs caused by the potential generation of future truck traffic; and • a comprehensive mitigation program, designed to run the life of the mineral extraction activity (including reclamation) which will: - cover the fair-share portion of surrounding roadway maintenance costs due to the increase in local truck activity, or - provide new or appropriate improvements to existing roadway facilities which in the opinion of the City would mitigate the impacts caused by the increase in local truck traffic.	Ongoing	New Program	Community Development	Development Review Fees
1.5.9 Using the information gained through the implementation of strategy 1.5.8, the development review process, and the City's rules for the implementing the CEQA process, develop appropriate conditions for all new or expanded mineral extraction operations which both protect the existing and future viable mineral resources, and protects the surrounding land uses from significant environmental impacts due to mining activities.	Ongoing	New Program	Community Development	Development Review Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.5.10	Using the concepts described in the Concepts, Alternatives and Options section of the Circulation Element, work with private mining operators to establish specialized truck routes which: • allow for the transport of raw and finished materials to be transported for quarries within the Santa Ana River Wash area to the Foothill Freeway; • reduce, to the extent feasible, the movement of mining transport trucks on City streets; and • mitigate to the extent feasible, the noise, dust, vibration effects of such transport activities on surrounding land uses.	Ongoing	New Program	Community Development	Department Budget mineral extraction fees, when available.
1.5.11	Using the concepts described in the Concepts, Alternatives and Options section of the Circulation Element, work with private mining operators to establish specialized truck routes which allow for the transport of raw and finished materials to be transported from quarries within the Santa Ana River Wash area to the Foothill Freeway.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget, mineral extraction fees when available
Objective 1.6: To encourage the development of commuter rail systems connecting with the regional commuter rail system.					
1.6.1	Work with the Southern California Commuter Rail Council and the San Bernardino Association of Governments and OMNITRANS to establish a transit connection with the Metrolink Commuter Rail System.	Complete connection by end of 1995	New Program	Community Development, Public Works	Department Budget, Transportation Grants and funds as they become available

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 2: Develop and maintain a transportation system which maximizes freedom of movement and balances concerns for mobility, safety, and the quality of the City's living environment.					
<i>Objective 2.1: Incorporate consideration of regional transportation implications into decisions made by the City of Highland, and to incorporate consideration of the local transportation implications on the City of Highland into decisions made by other local agencies, as well as into decisions made by state and federal agencies.</i>					
2.1.1	Prior to permitting connection of roadways from adjacent jurisdictions into the City of Highland, ensure that regional benefits are not achieved at the expense of Highland residents and businesses. Where a potential for negative impacts to Highland residents and businesses exists, ensure that the agency proposing the connection provides sufficient mitigation such that the connection is not only of regional benefit, but also of benefit to the City of Highland.	Ongoing	New Program	Community Development, Public Works	Department Budget
2.1.2	Maintain the integrity of residential neighborhoods by discouraging through traffic and preventing the creation of new major roadway connections through existing residential neighborhoods.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
<i>Objective 2.2: Balance the need for free traffic flow with economic realities, environmental and aesthetic considerations such that streets are designed to handle normal traffic flows with tolerances to allow for potential short-term delays at peak hours.</i>					
2.2.1	Maintain flexibility in the cross-sections and configuration of streets within topographically rugged or environmentally sensitive areas. Where appropriate, require minimum improvements including street trees and asphaltic berm curbing as approved by the City Engineer. Within topographically rugged and rural areas, maintain flexibility in street light requirements, limiting street light locations to those areas required for safety (e.g., curves and intersections).	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
2.2.2	In an effort to provide a circulation alternative and to relieve traffic congestion in the Historic District, work with the City of San Bernardino and Caltrans in the development of an alignment and cost feasibility study which would extend Church Avenue along the south side of the Foothill Freeway to connect with Palm Avenue.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
2.2.3	Work with Regional Transportation Agencies in an effort to implement the San Bernardino County Congestion Management Plan by implementing programs identified as local responsibilities in the Circulation Element where feasible.	Ongoing	New Program	Community Development, Public Works	Department Budget
2.2.4	Provide necessary space and facilities to accommodate a balance of transportation forms, including automobiles, public transportation, bicycles, and pedestrians.	Ongoing	New Program	Community Development, Public Works	Department Budget
2.2.5	Support privately funded local transit systems for commuter residents, and maintain local transit systems for seniors and youth.	Ongoing	New Program	Community Development, Public Works	Department Budget
2.2.6	Designate the following roadways as Scenic Highways and establish guidelines which protect visual resources in the community and allow for the development of additional recreational opportunities: • Boulder Avenue • Base Line (east of City Creek) • Palm Avenue • Greenspot Road • Church Street • Highland Avenue (east of City Creek)	Designate streets within 18 months post General Plan adoption, and establish scenic highway setback and development criteria 24 months post General Plan adoption.	New Program	Community Development, Public Works Department	Department Budgets

**PUBLIC SERVICES
AND FACILITIES**

Public Services and Facilities

Introduction

This Element contains information on those services and facilities that provide basic necessities to support Highland's existing and proposed land uses. These include such facilities as water, sewer, solid waste, electricity, natural gas, and telecommunications; and such services as fire, police, schools, and social services.

State law does not require the preparation of a general plan element dealing specifically with public services and facilities. However, it does state that:

..."The general plan may include any other elements or address any other subjects which, in the judgement of the legislative body, relate to the physical development of the county or city" (Government Code section 65303).

Purpose and Function

The Public Services and Facilities Element provides the goals and strategies necessary to ensure that public facilities and services for Highland's residents, commerce, and industry are adequately provided.

The purpose of the goals and strategies in this section is to incorporate future public services and facilities considerations into the City's planning and decisionmaking process to ensure that adequate public services and facilities will be provided.

The Public Services and Facilities Element has been organized to address the following issues:

- General Services and Facilities
- Water Facilities
- Wastewater Facilities
- Solid Waste Facilities and Equipment
- Energy
- Telecommunication Facilities
- Law Enforcement Facilities and Equipment
- Fire Facilities and Equipment
- Educational Facilities
- Cultural Facilities and Social Services

Public Services and Facilities

Goals Summary

Goal 1

Ongoing coordination of development activity with the provision of public services and facilities in order to eliminate gaps in service provision, maximize the utilization of existing and proposed public facilities, provide efficient and economical public services, and to achieve the equitable sharing of costs of such services and facilities.

Goal 2

Cooperative school/public facility planning, which will ensure provision of adequate school facilities and quality educational programs in a manner consistent with the goals and strategies of the Highland General Plan with respect to facility location, use type, timing, funding, recreational and social joint use programs. Participation in the development, design and implementation of programs aimed at preserving limited and increasingly valuable landfill space.

Goal 3

Maintenance of a system of cultural facilities and social services sufficient to meet the needs of Highland residents.

Goal 4

Achieve a fiscally solvent, financially stable community.

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Existing Setting

General City Services and Facilities

City Hall

The City of Highland, a contract city, presently has a minimum of in-house staff, and, due to limited funds, contracts out many of the actual services to local public and private agencies. City services can be broken into the following categories: Community Development Services, Public Safety Services, Maintenance Services, and Finance and Administrative Services. Of these, current City staff provides direct administrative responsibility for functions related to general City administration, Community Development (Redevelopment, Economic Development, Code Enforcement), and Public Works. The balance of City services, including Building and Safety, Engineering, Traffic, and street maintenance are provided through contractual agreements with outside private companies, managed by in-house City staff or existing public agencies which serviced the area prior to the City's incorporation. A listing of current City services and responsible departments is summarized in Table II-C-1.

The City of Highland employs 17 people directly, and contracts out for additional services. Although the staffing level seems low in comparison to surrounding cities which provide their own in-house services, the City has been able to maintain an adequate level of service within the community while keeping the direct cost of administrative services to a minimum. As the City grows in size and new opportunities to enhance the existing revenue base are realized, a portion of City services might be transferred from contract providers to City administration. Such transfers will occur only where consistent with the City's commitment to provide the best level of service possible using the most cost-effective funding mechanisms, while maintaining an efficient administrative staffing level.

Additional discussion regarding the funding of future public services has been included in the Concepts, Options, and Alternatives Section of this Element.

Postal Facilities

The United States Post Office in Highland operates out of a 6,970 square foot retail postal facility and carrier annex, located at 27169 Base Line, within the City of Highland (see Figure II-C-1). The Post Office currently has 35 mail carriers, 12 clerks, and 3 supervisors.

The Postmaster has indicated that the existing building is too small and that the Post Office is currently evaluating its future needs. The Postal Facilities Engineer for the Highland area has projected that a 20,000 square foot retail postal facility and carrier annex will be needed to accommodate the future needs of the City.

Public Services and Facilities

Library Facilities

The Highland branch of the San Bernardino County Library is located at 27167 Base Line, in the City of Highland (see Figure II-C-1). This library serves the needs of City residents as well as residents of the nearby City of San Bernardino.

The current library is approximately 10,000 square feet and houses approximately 64,676 volumes. The library currently services a population of 36,750. In order to meet the county standard of 0.4 square feet of library space per capita, approximately 4,700 square feet of additional library space would be needed to service the existing population.

There are current plans to expand the Highland branch to 20,000 square feet by 2010.

In addition to the current library facilities, the Highland Branch Library operates a bookmobile that provides additional library services from Angelus Oaks to Chino Hills. It carries 6,000 volumes and has a staff of two persons, plus additional backup clerical staff at the branch library.

Water Facilities

The City of Highland is serviced by the East Valley Water District, which relies on both local groundwater, surface runoff from natural watershed and drainage areas, and State Water Project sources for domestic, commercial and agricultural uses. A majority of the water used in the study area is currently obtained from the San Bernardino Groundwater Basin and supplemented by the State Water Project. East Valley Water District service area boundaries and pressure zones are shown on Figure II-C-2.

For further discussion of water resources and conservation, refer to the Water Resources Section of the Open Space and Conservation Element.

The district operates approximately 20 wells in the area. Water is pumped from the wells and stored in storage reservoirs located throughout the district. The district has 13 reservoirs at 10 plant sites totalling approximately 20 million gallons (MG) of storage capacity.

The existing water distribution and transmission network varies considerably throughout the City. Transmission lines, used to transport large quantities of water from one area to another, rather than to individual dwelling units, range in size from 16 inches to 24 inches in diameter. Major transmission lines are located in parts of Victoria Avenue, Sterling Avenue, Del Rosa Avenue, Tippecanoe Avenue, Church Street, Weaver Street, Ninth Street, Base Line, Pacific Street, Highland Avenue, and Fifth Street (for more detail on locations and line sizes, refer to the Water Supply Plan prepared by the East Valley Water District, 1986). Distribution lines, used to deliver water to the individual dwelling units, also vary considerably throughout the City, depending upon the volume of required water flow. They range in size from three-fourths of one inch to 20 inches in diameter (where interior fire sprinklers in multi-family buildings are required). Major streets have the larger distribution lines, while secondary and local streets have progressively smaller lines as the need (demand) decreases within a given area.

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Public Services and Facilities

Table II-C-1
Existing City Department and Service Responsibilities

Department/Function
City Council
Comprised of the Mayor, Mayor Pro-Tem, and three council members, the City Council serves as the policy making body of the City. The City Council appoints the City Manager, City Attorney, and City Treasurer, as well as various members of the City's advisory committees and commissions. The City Council also establishes fiscal policy through the adoption of an annual Operating and Capital Improvement Budget.
General Government Services
General Government Services include the operations of the City Manager and Administrative Services. The City Manager serves as the chief administrative officer of the City. Under the direction of the City Council, the City Manager is responsible for the efficient and effective management of all municipal affairs. The City Manager recommends to Council the adoption of policies and regulations that are deemed necessary. This office is responsible for the preparation of the City's annual budget and for adherence to Council approved expenditure levels. Administrative Services include providing contract maintenance, major purchase analysis, and staff support as required by the City Manager and City Council.
Personnel
Responsible for centralized human resource functions within the City, the Personnel Department manages recruitment, classifications, reclassifications, evaluations, training programs, employee benefit monitoring, compensation studies, and employee relations.
Finance Division
The Finance Division is responsible for the administration of all financial record keeping and reporting functions. This Division also compiles the fiscal budget, capital budget, and financial statements for the City. The functions of the department are: financial reporting, internal auditing, budget control, cash management, accounts payable and receivable, purchasing, payroll, business licenses, dog licenses, redevelopment agency, and special district accounting. In addition, the Finance Division is also responsible for the administration of the Animal Control Contract.
Police Department
The City of Highland contracts with the San Bernardino Sheriff's Department for its law enforcement services. Providing law enforcement services to the City requires a coordinated effort on the part of the City Council, City staff, the Sheriff's department and the Citizens of Highland. This has been accomplished, in part, as a result of the strong support provided by the Highland Police Reserve Unit, the Citizen Patrol Unit, and the Citizen Information Exchange Committee.
Public Works Department
The City of Highland's Public Works Department consists of two functional divisions: Maintenance Services and Public Services. Each division is further broken down into specific programs.
Maintenance Services includes: Landscape Maintenance; Roadside Weed Abatement; Signal Maintenance; Street/Storm Drain Maintenance; Street Sweeping; Striping/Traffic Signage; and Tree Trimming.
Public Services includes: Animal Control; Bus Stop Shelters/Transit; Crossing Guards; Refuse Disposal/Recycling; and Vector Control.
Engineering Department
Engineering services are provided through a contract with an outside private engineering consulting firm under the direction of the in-house City Engineer. This department is responsible for the conditioning, processing, plan check and inspection of grading, street, traffic and storm drain improvements associated with land developments. This department is also responsible for the planning and implementation of capital improvement projects which are funded by public money. In addition, this department conducts special studies, such as traffic signal warrants, speed studies, assessment district engineers reports, etc., and provides staff support in the coordination of State and Federal programs.

Public Services and Facilities

**Table II-C-1
Existing City Department and Service Responsibilities**

Department/Function
Community Development Department
Planning Division
The Planning Division works with the City Engineer and the Building and Safety Division in overseeing land development activities within the City. This Division serves as staff to the Planning Commission, Design Review Committee, Street Naming Committee, Historical Preservation Board, Community Trails Committee and other ad hoc committees. The Planning Division meets on a frequent basis with the public and developers to review various land proposals and often coordinate the development review process. Additionally, this division is primarily responsible for carrying out the land development policies of the City and assists in relating those policies to the public. The Planning Division also administers the Community Development Block Grant Program. State law requires that each City adopt a General Plan, which provides the necessary framework and policies to determine how development will occur. The Planning Division, as well as the City Engineer/Public Works Department and the Building and Safety Division, is responsible in carrying out the goals and policies of the General Plan as established by the City Council. Additionally, this division carries out provisions of the Subdivision Map Act, the California Environmental Quality Act, and other State and local planning requirements ensuring orderly development within the community.
Building and Safety Division
Building and Safety Division services are provided under a contract with Willdan & Associates, Inc. This division of the Community Development Department is responsible for the enforcement of the building codes as adopted by the State of California and the City of Highland. They ensure that all buildings comply with health and safety requirements, and provide for the protection of property in the interest of public welfare. This division specifically processes plan checks and issues structural permits in compliance with building, electrical, plumbing, and mechanical code standards. Building and Safety processed permits valued at \$18,878,000 during the 1990-91 fiscal year and expects to process permits valued at \$20,000,000 next fiscal year.
Code Enforcement Division
The Code Enforcement Division of the Community Development Department is responsible for and has an active role in seeking compliance from the community with various City ordinances concerning land use, public nuisance, vehicle abatement, substandard housing and City business licenses requirements. Additionally, Code Enforcement works with the City Engineer, Planning Division, Building and Safety, and the Sheriff's Department to enforce City policies and regulations.
Redevelopment Agency
The Redevelopment Agency has the primary responsibility for the City's new economic development program. This function includes recruiting new commercial, business park, and light industrial development to the City in order to provide, over time, new shopping and employment opportunities for residents. The Agency will seek to eliminate blight and restore and revitalize the City by encouraging new investment and improving the quality of life.

Source: City of Highland Annual Budget 1991-1992

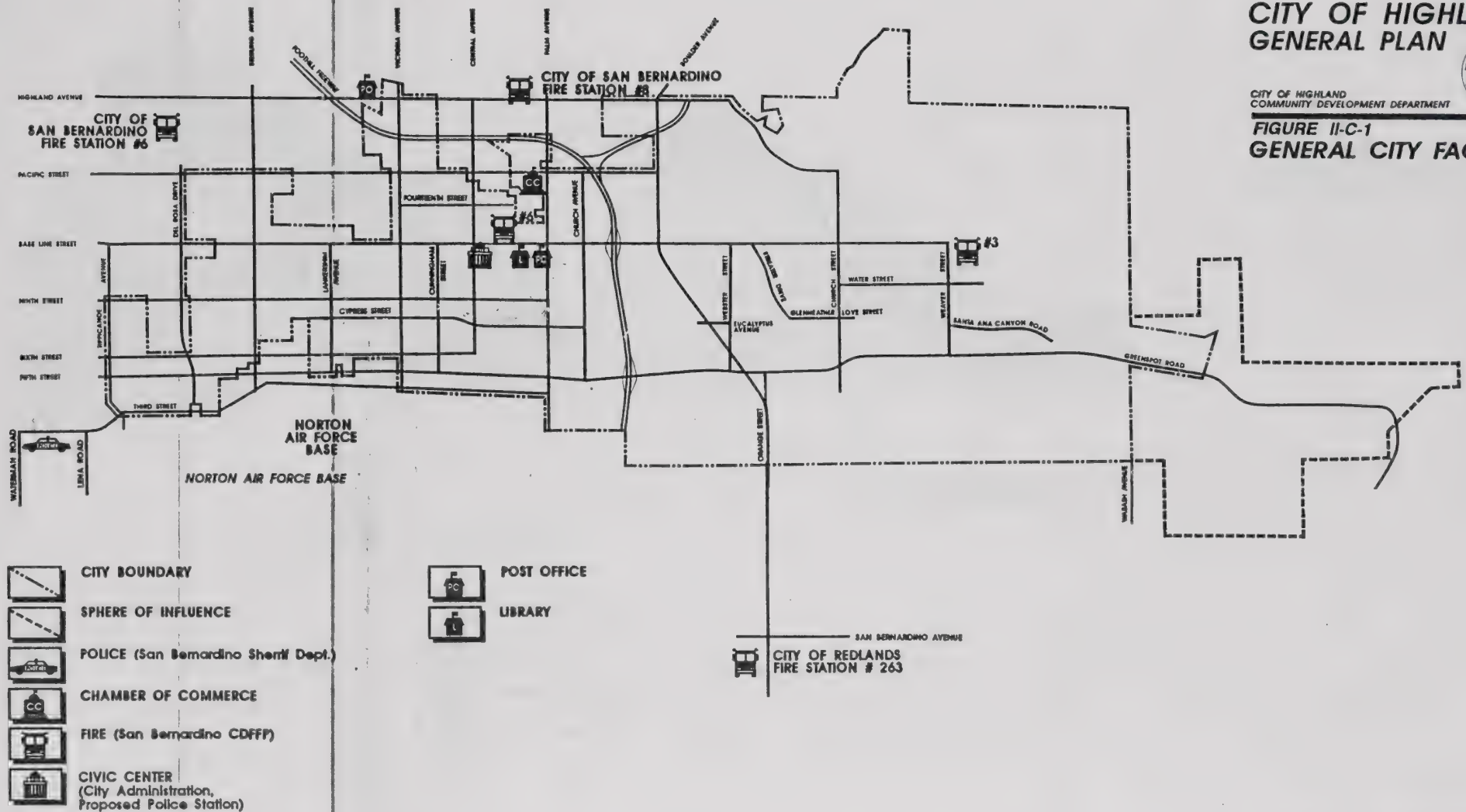
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CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-C-1
GENERAL CITY FACILITIES



- CITY BOUNDARY
- SPHERE OF INFLUENCE
- POLICE (San Bernardino Sheriff's Dept.)
- CHAMBER OF COMMERCE
- FIRE (San Bernardino CDFPP)
- CIVIC CENTER
(City Administration,
Proposed Police Station)

- POST OFFICE
- LIBRARY

SAN BERNARDINO AVENUE
CITY OF REDLANDS
FIRE STATION # 263

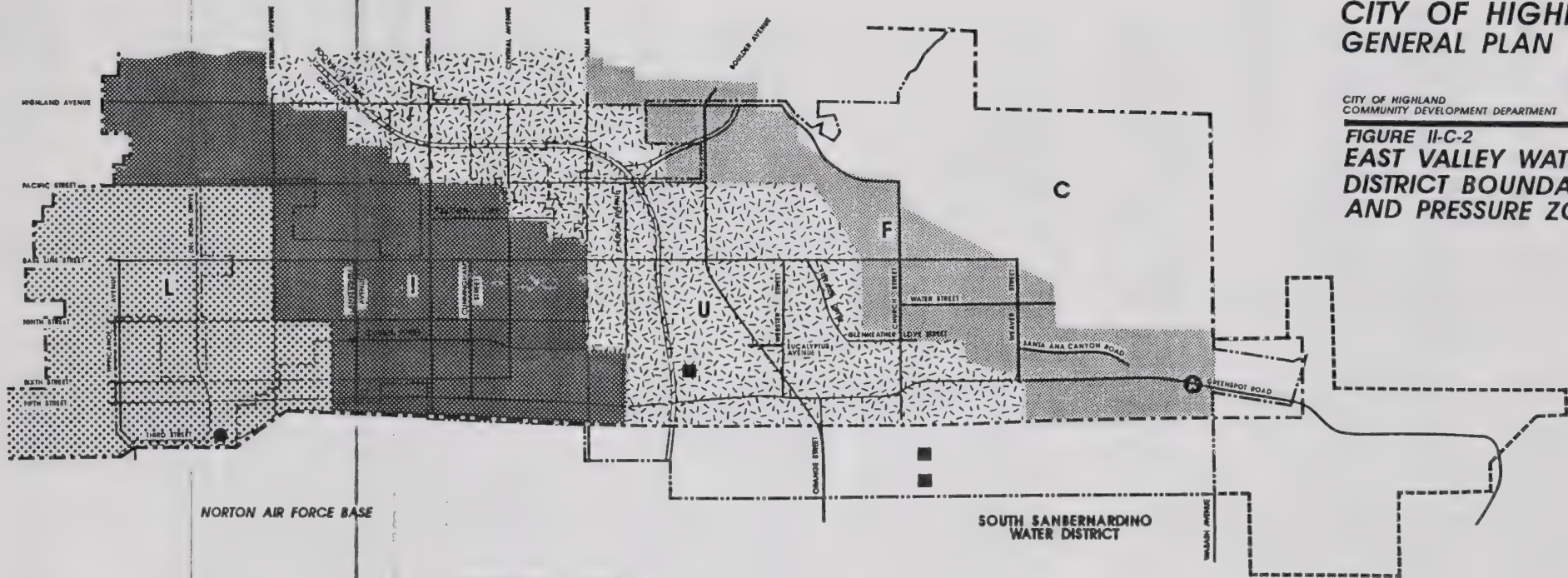


CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-C-2
EAST VALLEY WATER
DISTRICT BOUNDARIES
AND PRESSURE ZONES**



- CITY BOUNDARY
- SPHERE OF INFLUENCE
- E.V.W.D. BOUNDARY
- NEW WELL
- REBUILD WELL
- STORAGE RESERVOIR

- PRESSURE ZONES**
- CANAL ZONE
 - FOOTHILL ZONE
 - LOW ZONE
 - INTERMEDIATE ZONE
 - UPPER ZONE

Public Services and Facilities

Currently, the District is producing approximately 6,192 MG per year to supply a total of 17,129 services. The District has recently completed a new storage reservoir to add an additional 2 MG storage capacity. Current consumption factors within the district are 240 gallons per capita per day (gpcpd), compared to a current supply level of 221 gpcpd. The District has been actively promoting water conservation programs and thus is experiencing lower unit water demands. The District's goal is to achieve an average day demand of 210 gpcpd by 2015.

Wastewater Facilities

Wastewater transmission facilities for the City of Highland are provided by the East Valley Water District. The East Valley Water District has prepared a Master Plan of Sewage to address the current and future needs of the area it serves.

According to the Master Plan of Sewage, the general direction of flow is from northeast to southwest towards the San Bernardino Wastewater Treatment Plant, located outside the study area at 299 Blood Bank Road in the City of San Bernardino. Sewage generated from the Highland General Plan study area is conveyed through major east/west trunk lines located in parts of Pacific Street, Base Line, Ninth Street, Sixth Street and Fifth Street; and major north/south trunk lines located in parts of Webster Street, Palm Avenue, Central Avenue, Cunningham Street, Victoria Avenue, Sterling Avenue, Del Rosa Drive, and Tippecanoe Avenue (for more detail on locations and line sizes, refer to the Master Plan of Sewage prepared by the East Valley Water District, August 1984).

The District maintains a joint powers agreement with the City of San Bernardino requiring that the City accept all domestic and commercial/industrial sewage generated within the regional reclamation plants' service area. Currently, this service area extends eastward along Greenspot Road to areas outside of the City.

The City of San Bernardino Wastewater Treatment Plant treats an average flow of 25.5 million gallons per day (mgd). The current capacity of the plant is 28 mgd, leaving a remaining plant capacity of 2.5 mgd.

The City of San Bernardino is currently in the process of expanding the Wastewater Treatment Plant facilities. Plant expansion is expected to provide an additional 2.5 mgd to bring total capacity to 30.5 mgd. Future expansion plans are also being considered.

Drainage Facilities

The City of Highland study area contains a number of improved, semi-improved, and unimproved flood control channels and creeks. These channels and creeks (i.e. Upper Warm Creek Channel, Elm Storm Drain, City Creek Channel, City Creek, Bledsoe Creek, Plunge Creek) carry surface runoff and drainage to the Santa Ana River, which runs parallel to the southern boundary of the City east of Norton Air Force Base, and carries storm runoff out to sea. Although the yearly rainfall can vary from 7 to 30 inches (1983 to 1985), seasonal rains have caused severe localized north/south street flooding and channel/creek overflows (East Valley Water District supply plan, 1987).

Public Services and Facilities

For further information on flooding, refer to the Flooding Section of the Public Health and Safety Element.

The San Bernardino County Flood Control District has conducted drainage and flood flow pattern studies, from which a Master Storm Drain Plan was derived in 1979, in order to handle local 100-year storm flows. The City of Highland has adopted and modified portions of this Master Storm Drain System Plan for incorporated areas. Although the plan is now in the process of being updated, neither the City nor the County intend to upgrade the entire plan.

Solid Waste Facilities and Equipment

Solid waste service to the City of Highland is provided through contracts with several private waste collectors. The companies, their locations, and their equipment are shown in Table II-C-2.

Table II-C-2
Solid Waste Collection Serving
The City of Highland

Name and Location	Available Equipment
Cal Disposal 26009 East Sixth Street San Bernardino, CA	20 trucks, 4 used in City
Jacks Disposal and Recycling (includes Curran Rubbish Disposal) 380 West Oak Street San Bernardino, CA	14 trucks, 10 used in City

The majority of collected waste is disposed of in either the Colton, Mid-Valley, or San Timoteo landfill. The Colton landfill is approximately 10 miles to the southwest of the City, and at present disposal rates, is expected to close in 1997. The Mid-Valley landfill is located approximately 14 miles to the west of the City near the City of Fontana, and at present disposal rates, is expected to close in 2001. The San Timoteo landfill is located approximately 7 miles to the southeast near the City of Redlands, and at present disposal rates, is expected to close in 2022. All of these landfills are classified as Class III landfills suitable for disposal of non-hazardous and general municipal waste. Each landfill is owned and operated by the County of San Bernardino.

Public Services and Facilities

The current projected lifespans of these landfills could change based on the level of regional growth, waste generation, disposal trends (i.e., recycling), and the effectiveness of new and existing waste stream reduction/recovery programs. Closure of other regional landfills may also have an effect on these projected lifespans. Currently, the County of San Bernardino has plans to expand the capacities of the San Timeteo and Mid-Valley landfills, although these plans have not yet been approved.

The City has developed and/or participated in area wide recycling programs designed to reduce the amount of recyclable materials taken to area landfills. A City-sponsored recycling program to separate, collect, and recycle glass, plastics, cardboard, and fiberboard was established in 1991 at no cost to Highland residents.

In addition, the City participates in the County of San Bernardino sponsored "Merry Mulch" Program. This program encourages residents to provide Christmas trees for mulching at local landfills. Benefits of the program include free garden mulch to area residents.

Once a year the City Chamber of Commerce and local businesses sponsor a "Spring Clean-up" day. This program encourages residents to bring large bulky items to a designated location in the City for disposal.

Energy

Electricity

Electricity is provided to the City of Highland and the surrounding region by Southern California Edison (SCE) with a local office located at 287 Tennessee Street in the City of Redlands. SCE operates a substation located at Third Street and Webster Street just west of Boulder Avenue. SCE maintains service area plans and will update them as necessary to meet future development. SCE has indicated that, as mandated by their charter, electrical facilities have been planned to meet anticipated demand resulting from growth within the study area.

Natural Gas

Natural gas service is provided to the City of Highland and the surrounding region by The Gas Company (TGC) with a local office located at 624 West Fourth Street in the City of San Bernardino. TGC has an area facilities plan and will update the plan as needed. The current distribution system is able to meet area demand and, according to TGC, will have no problem serving future anticipated population growth within the study area.

Telecommunication Facilities

Telephone Service

Telephone service is provided to the City of Highland by Pacific Bell and GTE. Highland is located within the "909" area code. Service and billing inquiries are handled through an "800" toll free telephone service. There are no Pacific Bell or GTE offices located within the City of Highland. Satellite payment facilities are located within the surrounding communities.

Public Services and Facilities

Pacific Bell and GTE are regulated by the California Public Utility Commission (PUC). Telephone service to unserved portions of the City and sphere will be extended pursuant to the phone companies' current rules and regulations subject to any tariffs on file with the California PUC.

Cable Television

Cable television is not legally classified as a utility and is not regulated by the California Public Utilities Commission. Therefore, regulation of all aspects of cable television is the responsibility of the local jurisdiction.

Cable television service is provided to the City of Highland through local cable franchises, including Comcast Cablevision and Southland Cable Television. A new type of cable service is also available through Cross Country Wireless Cable Television. Wireless cable is a new form of cable service which operates using microwave distribution to individual audio/video receivers, instead of direct cable links.

Law Enforcement Facilities and Equipment

Police protection in the City of Highland is provided by the San Bernardino County Sheriff's Department Central Substation, located at 655 East Third Street in the City of San Bernardino. This department provides law enforcement and police protection services within the incorporated limits of the City and its sphere of influence. In the near future, a 4,000 square foot sheriff's substation will be located on a one-acre lot adjacent to City Hall (see Figure II-C-1, General City Facilities).

There are presently 23 sworn officers servicing Highland with a service level of 0.72 officers per 1,000 people. This ratio is below the County's desired ratio of 0.76 officers per 1,000 people, but due to limited financial resources, it is unlikely that police staffing levels could be expanded. The department maintains six marked patrol vehicles, two detective units, one court unit, one captain's unit, six bicycle units, and one citizen's patrol unit.

Average department response time is approximately three minutes for emergency calls and eight minutes for routine responses. The City of Highland operates under mutual aid agreements with the City of San Bernardino and San Bernardino County.

Based on a projected population of 61,577 at buildout, it is likely that the police department will need additional personnel and additional office space to serve the future needs of the community.

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Fire Facilities and Equipment

Highland is located within the California Department of Forestry and Fire Protection (CDFFP) Community Service Area (CSA) 38 and is serviced by the San Bernardino County Forestry and Fire Warden Department. CDFFP currently has three stations that would respond to calls within the City and its sphere. Portions of the study area that are within National Forest lands are served by the U.S. Forest Service. The locations, personnel, and available equipment are provided in Table II-C-3 (see also Figure II-C-1, General City Facilities).

Table II-C-3
Fire Stations Serving the City of Highland

Name and Location	24-Hour Manpower	Available Equipment
Fire Station 6 26974 Base Line Highland, CA	5-7 persons + 15 reserves	2 urban-type engines* 1 paramedic squad
Fire Station No 3 29507 Baseline Ave Highland, CA	15 reserves	2 urban-type engines 1-rescue squad
Fire Station 9 1300 Crafton Ave Mentone, CA	2 persons 12 reserves	2 urban-type engines

Source: Paul Miller, Fire Marshall (CDFFWD), September 1992.

* One Engine is Paramedic/Fire Unit.

The City of Highland has available fire protection services from other area agencies. The San Bernardino County Forestry and Fire Warden Department (CSA38), which provides services to Highland, participates in the Statewide Master Mutual Aid Agreement, as well as an automatic aid response agreement with the City of Redlands. The mutual aid agreement requires the department requesting assistance to be on the scene before summoning support from other departments. The automatic aid agreement renders simultaneous response from various departments upon initial report of an emergency. Currently, the SBCFFD has a full automatic agreement with the City of Redlands and a limited aid agreement with the City of San Bernardino.

According to San Bernardino County of Forestry and Fire Warden Department (SBCFFD) based on staffing strength, the City of Highland would maintain a level of service of 1.1 fire fighting professionals per 1,000 people. However, these stations are responsible for additional areas outside the City of Highland. Average response time within the City of Highland is four minutes. The most common calls are calls for medical aid and response to wildland fires. Medical calls represent approximately 70 to 80 percent of all service calls.

Public Services and Facilities

Educational Facilities

The City of Highland's comprehensive K-12 educational facilities and programs are provided by the San Bernardino City Unified and Redlands Unified School Districts. The San Bernardino City Unified School District generally covers the area west of City Creek and the Redlands Unified School District generally covers the area east of City Creek (see Figure II-C-3).

Students from the City of Highland within the San Bernardino City Unified School District (SBUSD) are currently served by six elementary schools, one middle school, and one high school. Students within the Redlands Unified School District (RUSD) are currently served by two elementary schools, one junior high school, and one high school. Table II-C-4 identifies the schools' location, district, and the grade levels they serve.

In approximately two to three years, the new 10-acre Cram Elementary School will be completed. At that time, a portion of the students attending Mentone Elementary School will be transferred to this new school.

The current student generation factors used by the RUSD are summarized in the General Plan Generation Factors Section of the Appendix. The difference in generation factors is based on the demographics of the areas served and historic trends. Any estimates of future student population will be based on these generation factors.

It is anticipated that a greater amount of pupils will be generated in the Redlands School District, due to the substantial amount of approved development within East Highlands Ranch that has yet to be constructed.

Cultural Facilities and Social Services

Cultural Facilities

Currently, Highland does not have any cultural facilities within the City. However, residents do have access to many cultural facilities in surrounding communities, including museums and performing arts. Area cultural facilities include the San Bernardino County Museum, located south of the City near the I-10 Freeway in Redlands; Kimberly Crest Museum in Redlands; and the California Theatre of Performing Arts in the City of San Bernardino.

Social Services

Social services (i.e., adoption, homeless assistance, etc.) are provided to the City of Highland by the County of San Bernardino Department of Public Social Services. Services funded by the County may also be obtained at the City of Redlands Department of Public Services. A summary of social services available to the City of Highland through these agencies is shown in Table II-C-5.

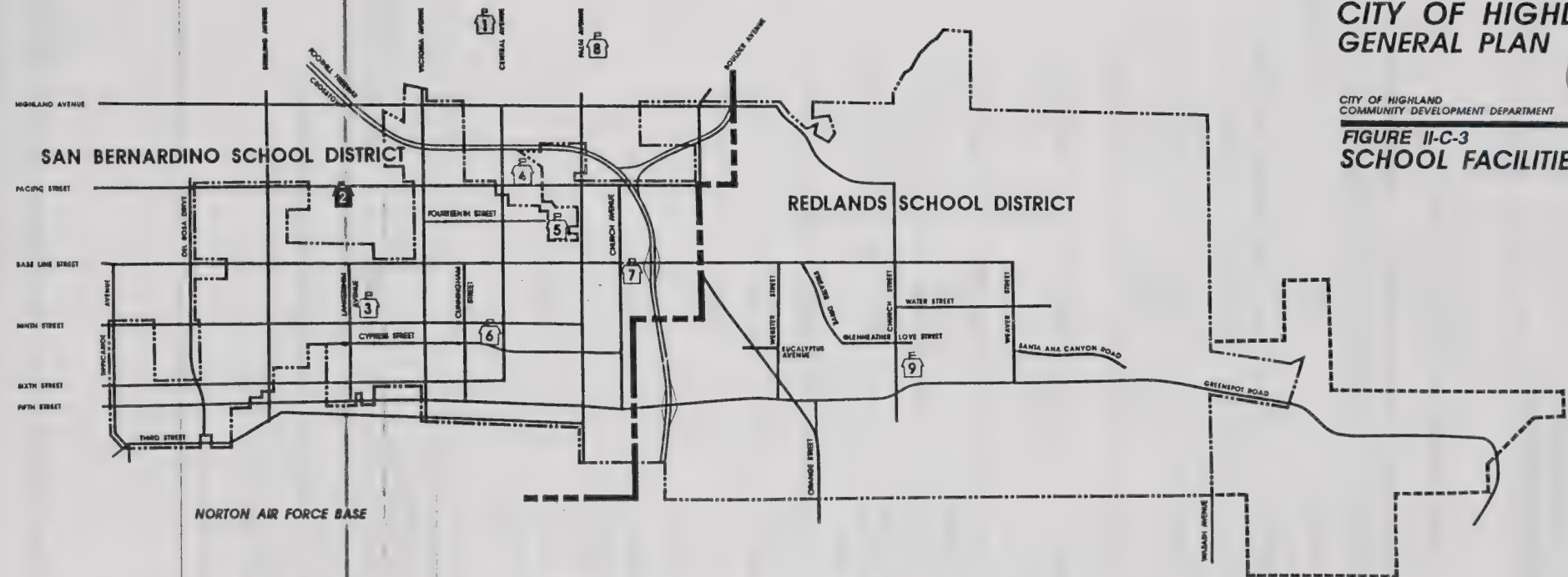
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CITY OF HIGHLAND GENERAL PLAN

CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



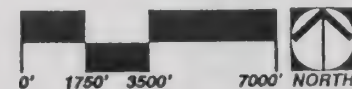
FIGURE II-C-3
SCHOOL FACILITIES



- CITY BOUNDARY
- SPHERE OF INFLUENCE
- SCHOOL DISTRICT BOUNDARY
- SERRANO MIDDLE SCHOOL
- SAN GERONIO HIGH SCHOOL
- LANKERSHIM ELEMENTARY SCHOOL

- HIGHLAND PACIFIC ELEMENTARY SCHOOL
- COLE ELEMENTARY SCHOOL
- CYPRESS ELEMENTARY SCHOOL
- THOMPSON ELEMENTARY SCHOOL
- OEHL ELEMENTARY SCHOOL
- ARROYO VERDE ELEMENTARY SCHOOL

- CLEMONT JUNIOR HIGH SCHOOL
- REDLANDS HIGH SCHOOL
- MENTONE ELEMENTARY SCHOOL



Public Services and Facilities

Table II-C-4
Schools Serving the City of Highland

School and Location	District	Grades Served
Arroyo Verde Elementary 7701 Church Street Highland, CA 92346	RUSD	K-6*
Clement Junior High 501 East Pennsylvania Avenue Redlands, CA 92374	RUSD	7-9
Cole Elementary 1331 Cole Avenue Highland, CA 92346	SBUSD	K-6
Cypress Elementary 26825 Cypress Street Highland, CA 92346	SBUSD	K-6
Highland-Pacific Elementary 3340 E. Pacific Avenue Highland, CA 92346	SBUSD	K-6
Lankershim Elementary 7499 Lankershim Street Highland, CA 92346	SBUSD	K-5*
Mentone Elementary School 1320 Crafton Avenue Mentone, CA 92359	RUSD	K-6
Oehl Elementary 2525 Palm Avenue Highland, CA 92346	SBUSD	K-6*
Redlands High School 840 East Citrus Avenue Redlands, CA 92373	RUSD	10-12
Serrano Middle School 3131 Piedmont Drive San Bernardino, CA 92404	SBUSD	7-8
San Gorgonio High School 2299 E. Pacific Avenue San Bernardino, CA 92346	SBUSD	9-12
Thompson Elementary 7401 Church Street Highland, CA 92346	SBUSD	K-6*

Source: Scott Shira, San Bernardino Unified School District; Teri Shira, Redlands Unified School District.

* Indicates continuous year-round schedule.

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Issues

General City Services and Facilities

A critical public service issue is defining the desirable levels of various public services and facilities, and the role which new development should play in providing for expansion of services and facilities.

Several major capital improvement programs within the City include:

- Construction of a new 47,000 square foot City Hall, including a 15,000 square foot library.
- Construction of a City Corporation Yard, office and maintenance buildings, gas pumps, and garages.
- Construction of temporary Highland Sheriff facilities.
- Beautification projects, including street name sign replacement.
- Drainage improvements, including a master plan of drainage facilities.
- Traffic improvements, including traffic signals, street lights, and left turn arrows.
- Widening of several streets, and the addition of sidewalks in some areas.

Public Services and Facilities

**Table II-C-5
Summary of Social Services**

Social Service	Agency	Responsibility
Aid For Families With Dependent Children	County of San Bernardino in conjunction with the City of Redlands Department of Public Services	Provides money to needy families who qualify
Food Stamps	County of San Bernardino in conjunction with the City of Redlands Department of Public Services	Provides food vouchers to needy people or families
General Relief	County of San Bernardino in conjunction with the City of Redlands Department of Public Services	Provides money for single adults without children until they are able to provide for themselves
Homeless Assistance	County of San Bernardino in conjunction with the City of Redlands Department of Public Services	Provides money for deposits on apartments, utilities and last month's rent (not monthly rent) for homeless persons who are homeless at no fault of their own (i.e., evictions or demolitions of property) who have immediate need for housing
In-Home Support Services	County of San Bernardino in conjunction with the City of Redlands Department of Public Services	Provides hourly allotments of in-home services to disabled/elderly persons (i.e., bathing, cooking, and cleaning)
Adoptions	County of San Bernardino	Adoption of a child identity unknown and independent adoptions of a child identity known
Pregnancy Counseling	County of San Bernardino	Counseling available to women who are or think they might be pregnant; alternatives discussed
Adult Protection Services	County of San Bernardino	
Child Protection Services	County of San Bernardino	
Foster Home Services	County of San Bernardino	

Source: San Bernardino County Department of Social Services, 1992.

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Public Services and Facilities

The City must not only ensure that public services and facilities are provided for new development within the City, but also that *existing* needs created by existing development are met as well. The costs for these services cannot be legitimately allocated to new development.

The concept that new development should pay for itself is well established; however, a clear definition of "pay for itself" is needed. Such a definition is embodied in this Public Services and Facilities Element.

The City currently contracts for many of its public service responsibilities. Because of the limited tax base in the City, it is unclear whether the provision of such services will continue on a contractual basis or be administered directly through additional City administration. In order to provide both efficient and cost effective public services, the City will need to be aware of all options related to the financing of public services.

For future development, a monetary figure for the development of new capital facilities requirements is also needed. This figure should be used as the basis for determining Development Impact Fees for the City of Highland.

Existing library facilities remain deficient in services according to established standards. The Highland Branch Library is currently in need of 4,700 additional square feet of building space to meet County standards. At buildout of the study area, an additional 10,000 for a total of 24,692 square feet of library space will be needed to serve the future population. Although plans to both expand the current facility and build a new 15,000 square foot library as part of the new civic center have the potential of solving the identified deficit, these projects may be funded over a long period of time.

Water Facilities

The long-term availability of water resources to support projected growth is a critical issue throughout the State.

The East Valley Water District has estimated that by 2015, the population within the District's service area will total approximately 110,000 persons. Assuming the continuation of current growth trends in the City of Highland, the District estimated that in the year 2015 it would serve approximately 66,000 residents in the City of Highland. The District has indicated that they should be able to supply water to meet the needs of future development expanding facilities as they are needed.

The buildout of all land uses within the study area predicts an ultimate buildout population of 61,803 persons. This number is based on an approximate 70 percent buildout of all land uses designated within the study area. Additional high and low buildout estimates have been included in the Alternatives Section of the Appendix. Based on historic land use patterns, the lower of the two numbers is the most likely buildout population which will occur in Highland. This number is also well within the limits of the population EVWD projects for the Highland service area (see Appendix for a complete breakdown of future generation rates).

The district continually plans for additions to its facilities to be comfortably online with sufficient supply sources and distribution capacity to meet all peak demands as necessary. To meet the demands of future customers, East Valley Water District has identified a number of improvement projects, including projects to secure additional water supplies, water system operations improvements, and pipeline upgrades.

Public Services and Facilities

The San Bernardino Valley Municipal Water District (SBVMWD) projects that it has sufficient commitments from the State Water Project and other sources to support projected growth in the region in normal and wet years through the Year 2010. During extended drought periods, such as the one now being experienced throughout the State of California, cutbacks in water deliveries from the State Water Project and other sources are a short-term reality. If the remaining portions of the State Water Project are not constructed within the next twenty years, SBVMWD will not be able to provide sufficient water to support the projected population within the region after the Year 2010, unless new sources are developed.

Wastewater Facilities

The East Valley Water District (EVWD) has prepared a Sewage Collection Master Plan to identify sewer facility needs over the next several years. In this plan, the following issues were presented that will need to be addressed.

- A number of sewer lines will need to be replaced due to deterioration over time. New development cannot be expected to finance replacement of these deteriorating lines; this is a normal cost of operation and maintenance.
- In addition to the replacement of existing lines, new development will require the construction of new sewer lines; a few existing lines will also need to be upsized as the result of new development.
- The existing sewage treatment plant has capacity available to handle current development. However, as new development occurs, the existing facility may need upsizing or further improvements, or a new facility may need to be constructed if future capacities cannot be met.

Drainage Facilities

The City of Highland lies within several existing and distinct drainage areas including the Santa Ana River, Warm Creek, and City Creek. As a result of these drainage areas, a distinct flood control system is required for each area. These major improvements represent a significant cost in infrastructure to serve the entire City. As such, Citywide financing methods may have to be considered for these improvements. In addition, new development may also be required to fund the cost of upgrading existing systems to accommodate increased flows.

In addition to the delineation of needs created by existing development and new development within the City, implementation of the Santa Ana River Flood Control improvements also involves needs created by lands within Highland's sphere of influence.

The urban drainage systems which are located predominately in the western portion of the City will need upgrade improvements as new infill development is constructed. This future need will put pressure on new development to pay for the maintenance of existing drainage systems.

Providing public services in areas adjacent to the City of San Bernardino is compounded by the uneven nature of the city limits. Close coordination with the City of San Bernardino will be necessary to ensure that both gaps and overlaps in services are avoided.

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Solid Waste Facilities and Equipment

Although the availability of landfill sites is the responsibility of San Bernardino County, this may become an important issue in the near and mid-term future. San Bernardino County has reported that it has sufficient landfill capacity for the foreseeable future. However, soon after the Year 2000, as existing facilities reach capacity and shut down, difficulties with siting new facilities could significantly reduce the life span of remaining facilities, creating significant shortages of landfill availability.

Projected future development may require additional refuse vehicles. As a result, the City may need to contract with additional refuse collectors or request additional vehicles from current contractors. This eventuality, along with the potential of larger landfill disposal fees as landfill space diminishes, may result in the increase of future trash collection fees within the City.

The passage of the California Integrated Waste Management Act of 1989 (commonly referred to as AB 939) requires all cities to prepare and implement a plan to reduce their waste stream by 25 percent by 1995, and 50 percent by the Year 2000. Implementation of AB 939 will require the City to continue implementing programs to cut down on solid waste being generated in the City and disposed of at landfills.

Energy

Energy facilities and systems are required by the Public Utilities Commission to keep pace with development. Although current distribution facilities are presently adequate, there may be supply shortages in the future. As the City grows, alternatives which create a more active role in energy conservation for the City, residents, and local businesses will need to be explored.

Law Enforcement Facilities and Equipment

Future development within the Highland area will require additional officers to maintain an officer-to-population service ratio adequate to serve the needs of the community. Although the City may require future increases in police protection, it is unclear whether the City will be able to fund them. The City will need to investigate alternative funding sources other than the General Fund.

Fire Facilities and Equipment

As development within the City and its sphere of influence occurs, significantly greater demands will be placed upon the available fire prevention services. Existing facilities, equipment, and staffing provide only basic levels of protection to the current population, and will not be adequate to support significant future urbanization of the area.

The Hillside area adjacent to the developed and undeveloped areas of the City will continue to have a need for wildland fire prevention and services. Existing mutual aid agreements and the existing contract with County Service Area 38 is expected to provide adequate protection for areas subject to wildfire hazards.

Public Services and Facilities

Educational Facilities

It is anticipated that both the San Bernardino and Redlands Unified School Districts will face a shortage of space for the foreseeable future, with enrollment growing faster than the Districts are able to build new facilities.

Development fees which are expected to be collected for school construction from residential, commercial, and industrial projects are projected to be far less than actual construction costs associated with school facility construction; however, State law generally restricts increases in school fees.

State agencies (Department of Finance, Department of Education, Office of Local Assistance) have recognized that a severe shortage exists in the State's school construction fund. Thus, funding for new schools will largely be a matter of local concern, even with the recent passage of a \$1 billion State bond issue.

In relation to school facilities and their relationship to recreation potential, the key issues which must be addressed include a need to:

- maximize utilization of facilities by neighborhood residents to save money and cut budgets;
- identify a source of funds for construction of permanent and portable school facilities;
- coordinate timing of school and park construction relative to projected development;
- provide adequate support facilities (e.g., libraries, multi-purpose rooms, health services, food services);
- explore the use of year-round education as a means to more fully utilize schools; and
- identify optimum school size in terms of enrollment and physical needs.

In addition to direct school and City concerns, several other concerns must be addressed by the General Plan school/park program:

- Developers want evidence that their contributions toward schools and recreation facilities will be applied equitably to all development.
- Full and discernable disclosure of existing and projected school and recreation facilities and their financing needs to be made to the consumer (home buyer) through real estate disclosure methods.
- Coordinated periodic reporting of projected development and population levels needs to be provided by both the City and County.
- Appropriate school/park relationships need to be achieved within individual neighborhoods and/or developments.
- Neighborhoods and/or developments should be sized and configured to utilize an elementary school site as a basic unit of organization.

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The potential for joint facilities planning between the City of Highland, San Bernardino Unified School District, and the Redlands School Unified District presents numerous opportunities:

- The establishment of a program of joint school/park facilities will intensify utilization of facilities and reduce security problems, while at the same time give a higher return for local tax payers.
- Combining future school and park development with joint funding and locations will result in both capital investment savings and long-term operation and maintenance savings.
- Joint facilities planning will facilitate planning for future uses of schools and facilitate conversion to other uses when they are no longer needed.
- Joint facilities planning will enhance flexibility of design to provide for multiple use of school/park facilities, such as seniors programs (i.e., food services, health services), pre-school programs, "latchkey" programs, etc.
- Neighborhood and school planning boundaries can be made compatible to facilitate use of joint school/park sites as the core of new neighborhoods. It may also be possible to adapt existing schools to serve as neighborhood cores.
- The establishment of joint sites will facilitate involving the community in the planning process to achieve maximum use of facilities and a strong community support base.

In addressing community needs related to schools and parks, the City, SBUSD, and the RSD face significant constraints:

- The community may be resistant to bond issues as a method of financing new schools or parks.
- State requirements for school design sometimes do not coincide with local needs.
- The security of joint use school facilities must be ensured; the interplay between students and seniors using joint facilities must be carefully managed.
- Joint use programs may result in co-mingling of financing between government agencies. Joint financing arrangements must be carefully managed.
- Joint use agreements must ensure equity of investment and return to all parties.
- Ambiguity of identity for facilities may exist within many neighborhoods.

Cultural Facilities and Social Services

The City of Highland presently has no cultural facilities within the City. The City should pursue opportunities to make these types of facilities available to residents without putting undue budget strain on other necessary public services. Opportunities to provide cultural facilities with other nearby jurisdictions, County, or private organizations should be explored as alternatives to City-sponsored cultural facilities.

Public Services and Facilities

Concepts, Options, and Alternatives

Control Over Service Provision

As discussed earlier, many services provided to Highland citizens and businesses are provided by outside agencies under contract to the City or by special districts with separately elected governing boards. For Highland, as for most cities which have incorporated in the past 15 years, this arrangement has proven to be the most cost-efficient and effective way of providing municipal services.

In having municipal services provided through a number of agencies other than the City, active coordination efforts are required. Without such coordination, resolution of seemingly simple issues and implementation of development review processes can get bogged down if some agencies have policies and priorities which conflict with those of other agencies. In addition, problems can arise if the policies and priorities of agencies providing services within Highland are not consistent with City policies and priorities.

As a result of the conflicts and inconsistencies that can arise when multiple agencies are involved in providing services within a City, local residents and businesses often press for the City to take over the services provided by outside agencies. In other cases, residents and businesses ascribe a negative connotation to being a "Contract City," and urge a change of status to a "Full-Service City." Unless carefully considered and managed, the move to take over outside services can have serious implications for a city.

General City Services and Facilities

Most California communities, including the City of Highland, have exacted land dedications, facilities, or in-lieu fees from developers for several decades to finance public improvements. This section of the Highland General Plan serves as a discussion of the various methods which can be employed by the City to make up the shortfalls of existing deficiencies and ensure that new development pays for future impacts.

When considering what resources are available to fund needed infrastructure improvements, it is important the City of Highland consider all possible financing alternatives. Currently, the City of Highland has the opportunity to take advantage of several sources and mechanisms available to fund City services and facilities. The fundamental questions facing the City are to what degree services and facilities should be funded with current revenues or long-term debt. Most California communities, including the City of Highland, have exacted land dedications, facilities, or in-lieu fees from developers to finance public improvements. However, as sources of these funds decrease due to fluctuations in the economy, most local governments find that current revenues are inadequate to fund all public facility needs. For this reason, a well structured plan for the provision of public facilities should include a comprehensive review of all financial resource options that might be available to meet current and future public facilities needs. Among the sources of funding that should be considered are "pay-as-you-go" financing, debt financing, and public/private ventures.

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- **"Pay-as-you-go" financing** requires payment of infrastructure costs to occur directly from current revenues such as taxes, development impact fees and user charges, interest earnings, and grants from other governments.
- **Debt financing** requires that the City take advantage of available credit markets and raise funds through borrowing.
- **Public/private ventures** includes entering into agreements with a variety of private concerns and service providers to deliver services.

This section provides the concepts, options, and alternatives for funding the construction of public facilities along with an in-depth discussion of the various methods which can be employed by the City to solve existing deficiencies and ensure that new development pays for future impacts. Table II-C-6 summarizes some of the important characteristics of several types of financing sources which could be used by the City of Highland.

"Pay-as-You-Go" Financing

Although most cities can finance a significant portion of most local public facility needs, there is usually not sufficient revenue generated from current sources to finance all the infrastructure needs that have been identified. In addition, current revenues that fund public facility projects often accumulate in a reserve account and are not utilized until sufficient funds have been collected to finance identified projects.

Table II-C-6
Analysis of Advantages and Disadvantages
of Alternative Public Facilities Funding Mechanisms

Advantages	Disadvantages
Impact Fees and Service Fees	
Collection and administration are usually straightforward and equitable.	Imposition of fees requires expensive, time consuming analyses to establish the system and periodic updating of the fee structure.
Funds are earmarked for clearly identifiable public facilities.	Any individual may request an audit to determine if the fees are necessary and reasonable.
Funds are outside of the spending limits imposed by Article XIII B of the California Constitution (Proposition 4).	The fees may not be used for maintenance and operations of the public facilities except under special circumstances.
No direct public vote is necessary for such fees to be imposed.	Since unspent and uncommitted fees must be returned five years after they are collected, this could impede the actual construction of needed facilities during periods of slow growth.
Assessment Districts	
The historic use of assessment districts is well established and generally understood by the voting public.	Residents often view assessment districts as attempts to impose "hidden taxes."

Public Services and Facilities

Table II-C-6
Analysis of Advantages and Disadvantages
of Alternative Public Facilities Funding Mechanisms

Advantages	Disadvantages
Projects are paid for by those who directly benefit.	The requirement of a two-thirds vote tends to discourage their use in already developed areas.
The geographic area to be served by the facility or program is clearly defined.	District formation can be time consuming and costly.
Immediate financial burdens on the property owner or developer may be reduced.	Once established, the boundaries of an assessment district are not easily changed, except for Mello-Roos districts.
Cost allocations generally are apportioned on criteria other than property valuation, thereby increasing public receptivity.	Expanding or modifying the facilities in response to future needs generally requires financing from some alternative mechanism.
	Successful marketing of bonds or other financial instruments often hinges on factors beyond local control.

Redevelopment

Funding may be obtained from a variety of means, including bond sales, City Council loans to the agency, property sales, and advances from project developers.	Developers may pit one agency against another in seeking concessions for their projects.
Agreements may be tailored to individual projects within each redevelopment area.	The redevelopment agency may, directly or indirectly, be assuming a share of private sector investment risk.
Revenues generated by individual projects may be transferred into General Fund departmental accounts, provided that agency debt obligations are met first.	School districts, County, and other governmental units may challenge the creation of new redevelopment project areas or expansion of existing areas during the fiscal review process.
Tax increment flows from project areas may exceed the normal share of property tax collections, depending upon pass-through agreements.	Inevitably, there arises an unequal balance between using redevelopment to combat blight while also promoting economic growth.
The redevelopment agency can retain ownership to a site and take an equity position in new developments.	Existing redevelopment project areas may not encompass all sites where their tools are needed.

Debt Financing

The City would attain the immediate use and benefit for the facility as opposed to current revenue financing where immediate or rapid construction is severely limited.	The cost for the use of the money (interest) must be added to the total cost of the acquisition.
The cost of the capital is spread over successive generations of service users.	Potential revenues are dedicated to the repayment of debt and are therefore not available for other uses.
If the economy is expanding, or per capita income increases, then the cost to the individual taxpayer will be less burdensome than would full payment at the time the facility is acquired.	The issuance of too much debt may impair the credit standing of the City's bonds and thereby increase the cost of capital.
Because debt service payments are known and predictable, wide fluctuations in required expenditures are avoided.	

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Table II-C-6
Analysis of Advantages and Disadvantages
of Alternative Public Facilities Funding Mechanisms

Advantages	Disadvantages
General Obligation Bonds	
As the most secure direct debt instrument that can be issued by municipal governments, general obligation bonds are readily accepted by all investment groups.	Voter approval is required for general obligation bonds because they pledge the issuer's unlimited taxing authority.
Because these securities carry a pledge of the government's unlimited taxing authority, investors view them as very secure instruments and are willing to accept lower interest rates in exchange for limited risk.	Successful passage of a general obligation bond usually requires that the public is made aware of the benefits of the bond through a public education program. This adds to the cost of the bond process and requires an outlay of funds whether the bond is passed or not.
The ability to levy a tax to pay for debt service on general obligation bonds gives an issuer considerable flexibility.	The amount of general obligation debt is limited to the assess valuation of the City.
The security behind general obligation bonds is such that investors do not require the funding of a debt service reserve. As a result, the issuer may reduce the issue size.	The issuance of general obligation bonds directly influences the credit quality of outstanding debt. As the volume of outstanding general obligation debt increases, investor perception of the security behind the bond is affected.
Revenue Bonds	
Because revenue bonds do not pledge the government's taxing authority, voter approval is usually not required.	To protect investors against fluctuations in revenue collections, issuers must fund a debt service reserve. Usually financed from the bond proceeds, the reserve increases the size of the issue.
The capacity to issue revenue bonds is limited only to the amount of debt the system can support.	Because annual collections of revenues may vary in any system, investors require rates and charges to be set at levels that provide some margin of error. Most often, issuers must pledge or covenant to maintain rates and charges at anywhere from 1.1 to 1.5 times the maximum annual debt service.
Revenue bonds are considered the most equitable form of capital funding because they are repaid by the individuals who benefit directly from the improvement.	Revenue debt may be used only if the system is strong enough to support the annual requirements and coverage covenants (see above). To meet the additional capital demands, the issuer must either raise rates or defer projects until earlier obligations are repaid.
Public/Private Ventures	
The government finances the portion of the project eligible for tax-exempt debt, while a private partner secures taxable debt.	Private (taxable) financing of any project that would otherwise be eligible for tax-exempt financing is more costly.
The coordinated financing and construction of a joint venture may reduce construction costs.	The coordination of a public/private venture can be complicated and may require a significant commitment of city administrative staff.

Public Services and Facilities

Table II-C-6
Analysis of Advantages and Disadvantages
of Alternative Public Facilities Funding Mechanisms

Advantages	Disadvantages
Public/Private Ventures	
The City may assume all or part of the debt service on the taxable debt, thereby improving the security behind the private partner's debt issuance and reducing the interest rate.	Federal tax law governing the types of projects eligible for tax-exempt funding is complex.

Source: Planning Network, 1992.

Whatever the source of funds, the City must be careful to ensure that the commitment of current revenues and reserves to public facility projects leaves enough money to fund City administration and operational costs and to maintain sufficient reserves for emergencies. It should be stated, further, that attempts to finance infrastructure on a pay-as-you-go basis should never require that the City reduce its operating reserves below fiscally acceptable levels.

The financing of a city's public facilities through "pay-as-you-go" financing has the following advantages:

- *Reduced interest.* The savings in interest costs payable on outstanding debt can be used to finance additional facilities, reduce the tax rate, or expand services.
- *Increased flexibility.* The avoidance of fixed annual debt costs provides for greater flexibility during economic downturns. Future revenues, therefore, are not encumbered for debt service and can be used for other purposes.
- *Enhanced debt capacity.* The long-term availability of capital is preserved, and the future ability to borrow for "greater" capital needs is enhanced.
- *Improved borrowing terms.* By not carrying additional debt, the jurisdiction can achieve higher ratings and lower interest rates as flexibility and debt capacity are enhanced.
- *Increased fiscal responsibility.* The likelihood of incurring too much debt is reduced. Instead, decisionmakers are made aware of the impact of major capital expenditures on current operating budgets.

The main disadvantages of "pay-a-you-go" financing are noted below:

- *Lack of sufficient funds.* Revenues are usually not sufficient to pay for significant capital outlays, unless accumulated over time.
- *Benefit equity.* Those who benefit in the future from the public facility do not contribute to the cost.

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- *Inconsistent funding requirements.* The amount budgeted for capital projects may be inconsistent from year to year.

The following summary lists the variety of alternative sources that are normally considered as current revenues applicable to public facility projects.

Taxes

One typical source of revenue for the City is local property taxes. Once a primary source of revenue, this tax made up only 10.7 percent of Highland's revenue in the 1991-92 budget.

Property taxes are calculated by multiplying the assessed value of a given property by a tax rate (usually expressed as a rate per the assessed value). This tax is made up of several separate rates imposed by various government units such as the City, county, school district, or any other special district that provides services to property owners.

The second most common tax levied by local governments is the general sales tax, followed by individual income taxes and selective sales taxes also known as excise taxes. In most cases, the general sales and income taxes are "piggybacked" onto state taxes. That is, the taxes are collected by the state and then redistributed to the appropriate local governments. While piggybacking reduces local governments' administrative burden, it also reduces their ability to determine rates.

Excise taxes are levied on specific goods or activities such as gasoline, alcohol, cigarettes, and transient lodgings. Excise taxes may also be levied on the privilege of conducting a certain type of business or transaction. Deed transfer or real estate transfer taxes and taxes on land development or land subdivision are typical examples.

Special Assessments

To finance capital projects that directly benefit specific properties, the City may consider the use of special assessments. Since they are also levied on property, special assessments are considered to be similar to property taxes. Property taxes, however, are levied for the purpose of collecting revenues that permit the funding of a variety of Citywide benefits, whereas special assessments recover some or all for the cost of an improvement that directly benefits an individual property. Special assessments are based on a formula that relates the charge against a parcel of property to the services or benefits received.

For example, the City may desire to finance curbs and gutters in a residential neighborhood by allocating project costs to homeowners on the basis of street frontage. The City may also offer to give property owners the option of paying the assessment in a lump sum or pledging payments over time. If a significant number of property owners exercise the option of paying the assessment over time rather than in a lump sum, the City will be forced to borrow money or issue bonds to pay for the needed public facility improvements. When the special assessment revenues are used to repay the loan or pay debt service, this option becomes a borrowing mechanism rather than a pay-as-you-go option.

Special assessments are usually levied within smaller areas of the City typically called special assessment districts. They should not be confused with special districts discussed in the following section. Special assessment districts are not independent of the government that created them; they are a convenient designation for the cluster of properties that receives a specific benefit and is subject to the special assessment.

Public Services and Facilities

Special Districts

Special Districts are an effective public facilities financing mechanism when it can be determined that the facilities support a specifically defined geographic area. Typical applications include water distribution, sewer, parking, street lighting and landscape facilities, as well as maintenance of public rights-of-way.

The special district must be for a clear public purpose, and costs of the district must be equitably apportioned within the district in relation to the actual benefits received. District creation occurs by election, after a petition from the area's property owners and adoption of assessment procedures by the City Council resolution. In populated areas, the district must be approved by two-thirds vote of residents within the proposed district.

Once an area has been designated, actual revenues become available upon the issuance of bonds or via direct billing of property owners for assessments. Special districts are not subject to the spending limits under Article XIII B of the California Constitution (Proposition 4). The requirement for a two-thirds vote often restricts the formation of assessment districts to undeveloped areas held by a single or limited number of owners.

Virtually all assessment districts are formed (or their projects are financed) under one of seven enabling acts:

- *Improvement Act of 1911*
- *Municipal Improvement Act of 1913*
- *Improvement Bond Act of 1915*
- *Parking District Law of 1951*
- *Landscaping and Lighting Act of 1972*
- *Benefit Assessment Act of 1982*
- *Mello-Roos Community Facilities Act of 1982*

All of these mechanisms -- special assessments, special districts, and community facilities districts -- provide local governments with a means of separately financing and implementing improvements within a limited geographic area of the jurisdiction. They can be of particular use to cities facing the need to construct infrastructure in developing portions of the City.

User Charges

An increasingly important source of revenue used to support infrastructure expenditures is user fees and charges. User fees, and charges are often pledged to repay revenue bonds issued to finance new infrastructure as well as to pay for the cost of operating and maintaining facilities. Sewer and water utilities frequently rely on user fees while local governments are increasingly turning to fees to finance highway and road construction and maintenance. User fees in general, relieve pressure on the City's general revenue system and attempt to price government service efficiently. They are usually structured so that only those who receive a specific service bear its costs.

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Negotiated Exactions and Development Impact Fees

Development impact fees in the form of cash contributions are becoming the most popular form of exactions for many Southern California cities. The basic presumption in requiring exactions from developers is that the infrastructure or public facility impacts resulting from new development should be paid for by the developers whose actions create the need for the facilities. The imposition of development exactions and fees is legally governed by a rule of equity.

Fees and exactions must be used to address only the proportionate share of new facility and capacity expansion requirements directly associated with the burden of new growth. Popularly termed the "nexus test," this means that new development can be required to pay for all of the impacts it creates, but cannot be forced to finance needs created by existing development. Attached to projects as conditions of approval, development impact fees have been used to require that the developer make any of the following contributions:

- dedication of sites for public or common facilities;
- construction and dedication of public or common facilities;
- purchase and donation of vehicles and equipment for public or common use; or
- payments to defray the costs of land, facilities, vehicles, and equipment in connection with public or common facilities.

Grants and Transfer Payments

Grants and transfer payments are gifts of money from one governmental entity to another. Grants are usually awarded to achieve a specific public purpose and, as such, must satisfy numerous restrictions placed on the use of the funds. Community Development Block Grant (CDBG) funds are a prime example of this type of funding method.

In recent years, federal contributions to fund local public facilities have decreased. As a result, states are assuming an increasingly larger role in awarding grant money both from their own sources and from remaining federal funds that have been channeled to the state governments for allocation to local jurisdictions. However, since states have not come close to replacing the amount of federal grant monies once available, the relative contribution of grant awards to the capital budgets of most cities has diminished dramatically.

Borrowing

Borrowing or debt financing can be thought of as the temporary use or hire of someone else's capital to finance the City's public facility needs. Although debt must be repaid from the local government's revenue sources, the repayment can be made over time as the capital facility is used.

Normally, it would be fiscally unwise for a city to fund all its capital needs on a pay-as-you-go basis. Debt financing is appropriate not only when other sources of funds are unavailable, but when economic, financial, and planning considerations dictate its use.

Public Services and Facilities

Notes

Notes are short-term obligations to provide interim funding for a public facility project. They may be issued in anticipation of revenues to be derived from taxes, grants, or proceeds of permanent (long-term bond) financing. Those issued in anticipation of taxes or other revenues are usually sold for cash-flow purposes rather than to finance capital projects. When notes are repaid by grant monies, they are known as grant anticipation notes or GANs. When notes are redeemed by long-term permanent financing, they are known as bond anticipation notes or BANs.

For capital financing, the issuance of notes allows the City to identify the final cost of project construction before the sale of long-term debt. In this way, the City avoids issuing more debt than is required to fund the project. In addition, because notes usually have shorter maturities (one to three years), the City pays lower interest rates during the construction period and can defer permanent financing until more favorable market conditions exist.

Unlimited Tax General Obligation Bonds

Other than bonds guaranteed by a highly rated third party (e.g., bond insurers or letter of credit providers), unlimited tax general obligation bonds (G.O. bonds) are the most secure form of debt that a city can issue. The security offered to the investor is a pledge that taxes will be levied without limitation as to rate or amount to provide for the repayment of principal and interest. Because these securities carry a pledge of the City's unlimited taxing authority, the issuance of unlimited tax general obligation bonds usually requires voter approval.

Revenue Bonds

Revenue bonds are user-based securities that are backed by a pledge of a particular revenue stream. The security behind the debt depends on the strength of the revenue stream. For systems that provide essential public services (e.g., water), the security is fairly strong. If, however, use of the system is discretionary, investors must evaluate the reasonableness of the revenue projections. The increased risk associated with a discretionary revenue system may result in investor demands for higher interest earnings.

Revenue bonds usually carry a covenant that requires the issuer to maintain rates and charges at levels sufficient to generate net revenues in excess of annual debt service requirements. The covenant is usually required to offset fluctuations in the flow of funds pledged to debt redemption. The coverage covenants can range from 1.1 to 1.5 times the maximum annual bond debt service, depending on the stability of the system. In addition, revenue bond issuers are usually required to establish debt service reserve funds (normally 10 percent of issue size or the maximum debt service).

Taxable Bonds

Since recent changes in the federal tax code now restrict the types of projects eligible for tax-exempt financing, more and more local governments are being forced to issue taxable debt to finance capital equipment and facilities. Water, wastewater, and solid waste disposal facilities are among the projects that still qualify for tax exemption but are subject to restrictions as to the amount, maturity, issuance costs, and use of proceeds. Nonetheless, the loss of the tax exemption for other classes of facilities has resulted in more complicated sale structures and higher interest rates for municipal issuers.

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To the extent permitted, cities should continue to pursue tax-exempt borrowing whenever debt issuance is the most appropriate finance alternative. Where the tax exemption is unavailable, cities should consider taxable alternatives relative to other financing options (e.g., pay-as-you-go). The additional cost associated with taxable borrowing may, however, cause some cities either to defer projects or remove them entirely from the capital plan.

Tax Increment Financing

This technique requires the creation of a carefully drawn district (usually a redevelopment area that is determined to be "blighted") whose assessed value is "frozen." From that point on, the City keeps two sets of tax records for the district -- one for tax levies and collections on the frozen base and one for levies and collections on any growth in assessed value within the district. The City continues to participate in the distribution of base year assessments to all overlapping tax jurisdictions. The tax on the growth of the district's "incremental" assessed value finances public facility improvements within the specific district.

To provide "up-front" financing needed to construct improvements, city redevelopment agencies usually issue tax increment bonds secured by the taxes collected on the growth in assessed value. Investors take two fundamental risks when purchasing tax increment bonds. They assume that significant assessed value growth will occur in the district and that the tax rate applied to that anticipated growth will generate funds sufficient to repay the obligation. It is important to note that the tax increment district has no control over the tax rate. If the overlapping jurisdictions were to reduce their tax rates, the collections of tax increment revenues would likewise decline. For these reasons, tax increment financing is typically used where significant assessed value growth has already occurred and where the tax rate is stable. In recognition of the inherent risks, most bonds secured by tax increment revenue will carry local government's general obligation pledge. If the City expects that the tax increment revenue will be insufficient to cover debt service, it relies instead on its unlimited taxing authority.

Lease-Purchase Contracts and Certificates of Participation

In response to increased restrictions on the use of debt (most notably California's Proposition 13), lease-purchase contracts and certificates of participation (COPs) have gained widespread use among local governments. Lease-purchase contracts and certificates of participation are installment agreements that permit a city to acquire equipment and property without issuing debt. The City agrees to make payments on a lease-purchase contract to a private provider. At the end of the contract period, the City owns the equipment or property outright.

The installment payments are not considered indebtedness. In many cases, the City is required by law to limit the security behind the lease to non-tax resources such as various user charges. As a result, the lease obligation is less secure than a general obligation bond and contributes to higher interest rates. However, some municipal bond insurance companies insure lease purchase financing and permit some savings in interest costs.

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Revolving Loan Funds

Revolving loan funds are permanent sources of funds that can be loaned for a variety of purposes. As loan monies are repaid to the fund, they are loaned out again for other projects, thereby multiplying the benefits of the original investment many times over. Revolving loan funds frequently offer the advantage of below-market interest rates, with lengthy repayment periods of 20 years or longer. The funds are also used by local governments that have below-average credit ratings or that are too small to tap the bond market.

Public/Private Ventures

Many of Highland's public facilities may well be suited to some type of partnership between the government and a private enterprise. The public/private funding of such projects can take a variety of forms. The private partner may make an up-front contribution of funds or agree to secure a taxable municipal bond issue. The City could contribute funds from any combination of financing sources described thus far. By entering into cooperative arrangements, the City can realize measurable savings when costs are compared to government efforts designed to achieve the same purposes.

The concept of privatization has expanded significantly in recent years. The early 1980s saw a trend toward full privatization (ownership and operation) of government services, particularly in the area of wastewater treatment. Private investment funded both construction and ongoing maintenance costs. While the guarantee of sufficient returns is necessary to stimulate private investment, the Tax Reform Act of 1986 has reduced the tax benefits of privatization that originally attracted private investors. Recently, the issue of convenience has entered into the scenario of privatization. Services such as postal services and utility payment offices are found within new retail stores. The convenience of these services to meet commercial marketing objectives has increased the incentive value of privatizing government services.

The following is a list of the different forms of privatization used to finance capital needs:

- ***Contracting Out.*** Government contracts with a private firm (for-profit or nonprofit) to produce and/or deliver a specific service or part of a service.
- ***Franchise Agreements.*** Government grants a private organization either an exclusive or nonexclusive right to provide a particular service within a specific geographic area.
- ***Grants/Subsidies.*** Government makes a financial or in-kind contribution to a private organization or individual to facilitate the private provision of a service at a reduced cost to consumers.
- ***Incentives and User Fees.*** Local government uses its regulatory and taxing powers to encourage private firms to provide public services or to encourage individuals to reduce their demand for such services. Governments may also institute user fees whereby consumers are charged either a flat or quantity-related fee for the use of a particular service.
- ***Service Shedding.*** Government discontinues or relinquishes responsibility for a service. Private service providers may assume provision of the service, or the service may no longer be provided.

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Public Facilities Planning, Funding, and Decision- Making Process

The following concept provides discussion concerning the basic public policy goals that the City will consider when selecting a funding method for the provision of public services and facilities.

In selecting methods for financing a capital improvements program, the City will need to consider three goals. In general, methods used to fund public facility improvements should be effective, equitable, and efficient. Because it may be difficult to meet all of these goals at one time, the City may find it necessary to prioritize one goal over another when making decisions about particular public facility needs.

An effective financing method must prove to have timely results. In other words, it must be one that supplies the required amount of money for a proposed project at the time that it is needed. Effectiveness can often be a problem with special assessments and user fees in that either small amounts of money trickle in over a fairly long period or that revenue collections have the tendency to fluctuate with the level of regional economic activity.

The second important goal is the equity or fairness associated with the use of the financing method. Equity can be determined in at least two ways. First, the benefit principle holds that those who benefit from a government service or product should pay for it. A user's ability to pay for government services is the second equity principle. The graduated income tax, which taxes larger incomes at proportionately higher rates, is an example of a tax designed with the ability-to-pay principle in mind. In other words, households most financially able to pay for a service are taxed accordingly. However, the financing of recreation facilities partly through citywide levies, such as property taxes, and partly through user fees, reflects an effort on the part of the City to make sure that the user fees for recreation facilities are not so high as to deny moderate- or low-income residents use of the facilities. As the example suggests, the two equity principles can frequently conflict with one another.

The third general goal to consider when selecting financing options is efficiency. The efficiency of the financing method is related to, but not the same as, the economies of scale associated with capital investment, i.e., selecting the most efficiently sized public facility improvement for development. Specifically, the efficiency of the financing method refers to the relative costs of obtaining funds regardless of the financing method selected. For example, the cost of issuing bonds includes fees for legal and financial advisory assistance, just as the cost of collecting property tax revenues includes the salary of the property assessor and the cost of maintaining collection and payment records. Some methods of financing are relatively more expensive to administer than others. Often user fees, charges, or fines are relatively expensive to collect as compared to the amount of revenues generated. Impact fees are also relatively expensive to administer because of legal requirements that call for separate accounts for the collection and disbursement of impact fee revenues.

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Yet another aspect of the efficiency of financing pertains to the ability of the financing method to price public goods and thereby convey information to consumers about the true cost of supplying the government service or product. An example is fees for sewer and water consumption based on the amount of water consumed, rather than either a flat fee for service or general fund financing of a service. Charging a fee based on level of use promotes more efficient consumption. Consumers are made aware of and must contribute to funding the true costs of providing water and sewer services. A user fee system also addresses considerations of equity, in that those who benefit from a certain level of service pay for it.

Public Facilities Assessment and Reporting System

A key concept in the City's responsibility to provide an adequate level of public services and facilities is maintaining accountability for funds that are invested in the community as part of the City's Capital Improvement Program. State law, known as AB 1600, also requires that fee programs identify the specific facilities to be funded. In addition, all funds collected through a fee program must be expended or committed to a specific project within five years, or they are to be refunded. Cities establishing fee programs are also required to undertake an annual evaluation of the fees to ensure that they continue to be equitable, and that the nexus used to create the fee still exists.

To implement this concept, the development of an Public Facilities Assessment and Reporting System should be developed as part of the City's Capital Improvement Program to monitor the effectiveness, equity and efficiency and existing capacity of public services and facilities in order to ensure that proposed development does not overwhelm the existing facilities or the City's ability to provide services. Table II-C-7 represents a prototypical Public Facilities Assessment and Reporting System which could be implemented along with the City's normal capital improvement process.

Water Facilities

The City of Highland and the East Valley Water District will continue to require that new developments provide such water facilities as are necessary to ensure adequate service to new development without impacting existing development. This will require a specific review of the water facility needs of new projects as part of the development review process.

As California faces a continuing drought condition, however, optional methods to supplement the currently available water supply should be considered. Within the Highland General Plan study area, three sources of water are available. These include the local underlying groundwater basin, State Water project supplies, and local surface water. According to EVWD's Water Supply Plan, the conjunctive use of these three available water sources is both viable and feasible. The most apparent benefits, according to the plan, are system flexibility and reliability, especially during drought periods. Other intangible benefits include support for and contribution to basin-wide efforts in alleviating regional problems such as high groundwater tables and regional water shortages. Apparent tangible benefits may include energy savings and cost reductions.

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Table II-C-7
Prototypical Public Facility Assessment and Reporting System

Public Facility Assessment Reporting System	• Develop a system to collect, analyze and monitor information regarding capital projects. • Identity and understand the demands for services that will be placed on the local jurisdiction by regional demographic and economic changes. • Monitor the progress of current local development projects, and ensure that public services and facilities plans, as well as their forecasts and funding mechanisms reflect changing conditions.
Capital Improvement Program	• Identify and rank capital improvements which will be needed in the near to mid-term future; at a minimum, program major capital improvements on a five-year basis. • Consider the effects of new capital contributions on operating costs and revenues. • Determine how available resources can be used to meet the high priority needs. • Schedule the funding and implementation of capital projects.

Source: Planning Network, 1992.

Options for the development of such conjunctive facilities, according to the EVWD, could include the following options:

- *Groundwater supplemented by surface water:* The existing groundwater will be used as the major base of supply, and water treatment plants using local surface streams will supply additional water. The treatment plant scenario may be one including a single plant on a single stream, two separate plants on two streams, or a joint plant served with water from two or more surface supplies.
- *Groundwater supplemented by artificial recharge:* the existing well capacities will be fully utilized with the groundwater table stabilized by artificial recharge. The source of the recharging water will be State Project Water.
- *Groundwater supplemented by surface water and artificial recharge:* This is a mixture of the above two alternatives.

From the above options, a variety of alternatives can be developed, because treatment plant size can be varied, and artificial recharge can be at any level desired. However, in this study, nominal plant sizes and recharge levels were selected in the process of determining supplies to keep pace with growth. From the deployment-to-meet-demands process, five attractive alternatives emerged, of having various levels of conjunctive use of the three water sources. These alternatives are evaluated against an all-groundwater alternative, based on continued and increased use of groundwater as the sole supply.

Public Services and Facilities

Sewer Facilities

The City of Highland and East Valley Water District will continue to require that new developments provide such sewer facilities as are necessary to ensure adequate service to new development without impacting existing development. This will require a specific review of the sewer facility needs for new projects as part of both the Public Services and Facilities Assessment and Reporting System, and the development review process.

In addition, Highland will work with the City of San Bernardino to ensure that adequate sewage treatment and disposal facilities are available to meet future demands.

Drainage Facilities

The concept for provision of drainage facilities throughout the study area can be identified as being made up of two separate levels of public improvements. As is discussed in the Public Health and Safety Element of the General Plan, the study area contains major tributaries which carry storm runoff from the mountains to the north through the City and sphere of influence via several natural, semi-improved and improved channels. This primary drainage system provides the backbone for a secondary drainage system serving the urban portions of the study area.

The failure of either system could affect the safety of residents within the City. Although the need for both systems is apparent, the question of who should be burdened with the cost of improvement, renovation, and maintenance is not. It is important that consideration of the hierarchical relationship the two systems have on the City be included in the coordination efforts with the San Bernardino County Flood Control District in order that costs for major capital improvements paid by Highland residents is equal to the benefits received.

Solid Waste Facilities and Equipment

Along with ensuring that adequate facilities and equipment are available to collect and dispose of solid wastes, the City of Highland is currently working to reduce the amount of solid waste consistent with the provisions of AB 939, through the implementation of concepts designed to reduce the amount of recyclable material which has historically taken now valuable solid landfill space. The following concepts build upon the City's current resource recovery and recycling efforts, along with providing options for the development of new programs. This discussion also provides a basis from which the City can develop a City Source Reduction and Recycling Element.

Source reduction, reuse, and recycling offer a broad array of benefits to the environment. By modifying habits of consumption and waste disposal, the City can lessen the production of wastes which adversely affect the environment, conserve mineral, energy, and biomass resources, save forests, and increase the amount of landfill space needed for non-recyclable materials.

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When newspapers, glass, and cans are recycled, the raw materials that would have been used to produce the next generation of these items are not needed. A four-foot stack of newspaper, if recycled, saves one tree, while every ton of newspaper that is recycled will save 17 40-foot trees. Recycling steel and aluminum cans reduces the need for mining iron ore and bauxite ore, which are both often extracted in environmentally sensitive areas such as tropical rain forests. When glass is recycled, the need for mining silica and soda ash is reduced.

In response to this concern, the City of Highland has included the following resource recovery and recycling concepts in the Public Services and Facilities Element as documentation of the City's existing efforts to reduce the amount of recyclable materials in the waste stream and to provide feasible options for additional future programs. This discussion includes issues related to both public and private methods of source reduction, and recycling along with educational and market incentives used to support the City's efforts.

Source Reduction

Source reduction occupies the highest point in the Integrated Waste Management hierarchy because it reduces cost, conserves energy and resources, and even increases national economic competitiveness.

Source reduction can be achieved in a variety of ways; by reducing the amount and types of resources used in products, increasing their durability, reusing and repairing them, and decreasing consumption. The following summary describes alternative source reduction options which, if implemented, will represent leadership in efforts to divert recyclable materials from the waste stream. Although the information in the summary does not include the entire range of options which may be available now or in the future, it does give the City an accounting of current efforts, along with providing a menu of alternative programs to be investigated.

City Administrative Programs

The following concepts describe methods which the City of Highland can use to reduce the amount of waste that is generated from City administrative services on a day-to-day basis.

- *City Purchasing Preferences and Practices:* As a City policy, the criteria which is used to purchase materials for use in the administration of the City services and facilities would be altered to include integration of standards requiring that purchased items include recycled, recyclable, or reusable resources to the extent feasible.
- *Employee Education Programs:* The City could design a pilot employee education program which could be adapted to private businesses in the City which has as its goal the modification of employee habits regarding in-house resource reduction concepts. Goals of the program might include:
 - computerize in-house mail and filing;
 - use of reverse side for all copying and business forms; and
 - use of ceramic coffee cups instead of disposable cups.

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- *Information Flow Analysis:* In concert with the City's ongoing efforts to improve paperwork flow and efficiency, the following source reduction concepts could be integrated into the analysis:
 - analyze business forms to improve efficiency;
 - analyze incoming and outgoing mailing lists to reduce size; and
 - study the feasibility of reducing agenda packets.

Community Based Source Reduction Activities

The following are methods by which community residents can, on either an individual basis or in coordination with the City, reduce the amount of recyclable materials in the City's waste stream:

- *Pilot Composting Programs:* As part of this concept, individual home owners would be responsible in participating in a community-wide backyard composting program. A successful backyard composting program has the potential of removing most biodegradable wastes from the waste stream before it is picked up at the curb.
- *Reusable Shopping Bags:* The use of reusable bags has come into favor in many communities interested in source reduction. Such bags can be offered for sale at local grocery stores, or used as fund raising items or marketing tools for local businesses.
- *Second-Hand Sales and Collections:* Any sale of a reusable item is good for both the buyer and the seller. Whether bought at a garage sale, or antique or second-hand store, these purchases give a second life to many products which would otherwise end up in a landfill.

In addition, the collection of second-hand items by thrift shops and charitable organizations provides a method through which repairable or unused items can be put back into service.

- *Gardening Practices:* Yard and grass clippings make up a majority of the items currently found in most landfills. Almost all yard wastes can be used as mulching material at home or sent to professional composting operations. Much of the information about techniques used to take advantage of this resource are available but not widely distributed. This concept could be integrated into a community-wide information resource program set up by the City or local library as a community-based source reduction program.

Technical Assistance, Education, and Promotion

This concept could involve the set-up of a community-wide resource program which would be available to all residents. Such a concept could also involve the local business community by taking advantage of local retail nursery and home-improvement centers as resource information distribution points. Information might also be made available at the library, community centers, schools, and all community-sponsored functions.

In addition, the City could sponsor the following programs through coordination with local service providers, nursery associations, gardening clubs and organizations, etc.:

- Waste Evaluations

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- Composting Programs
- Technical Assistance Programs
- Public Awards or Recognition Programs

Regulatory Programs

In addition to concepts which are voluntary, the City of Highland has the opportunity to investigate the feasibility of implementing regulatory programs designed to reduce waste sources.

- *Development Requirements:* As part of the normal project review process, the City has the opportunity to establish requirements for waste reduction planning for businesses of a certain size or waste disposal volume. Revisions to a project to include recycling and source reduction storage areas could be incorporated early on into the design process.
- *City Legislation and Policy Decisions:* As a leader in the community, the City of Highland will have the opportunity to support new source reduction legislation. Endorsement of innovative laws, regulations and programs could send a clear message to the community. Examples of such recognition might include:
 - Encouragement of State and federal laws that govern the amounts and kinds of packaging.
 - Encouragement of State and federal laws prohibiting products with adverse effects upon the environment.

Recycling Programs

The following concepts describe the present and suggested recycling programs which will aid the City of Highland in attaining the 25 percent and 50 percent waste diversion goals.

Citywide Curbside Recycling

The City of Highland has developed a comprehensive program to provide a no-cost curbside program to City of Highland households. Glass, aluminum, steel cans, newspaper, corrugated cardboard, and any reusable material are collected.

City Office Recycling

The City of Highland has an office paper recycling program in all City Departments. Computer paper, white ledger, colored ledger, corrugated, and newspaper are collected. Additionally, desk-side and centralized containers are available to City employees to use for recycling white ledger and computer print-out paper.

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Citywide Christmas Tree Diversion Program

The City participates in the County of San Bernardino Sponsored "merry mulch" program. The program encourages residents to provide Christmas trees for mulching at local landfills. Benefits to local residents include the provision of free garden mulch to area residents.

Education Programs

The City of Highland has implemented education programs which include recycling information posters at City Hall and bus shelters, mailers, local newspaper articles, and City newsletters.

Private Sector Recycling Programs

In addition to the City-sponsored recycling programs, commercial recycling enterprises have offered a new investment opportunity within the City through the establishment of the following types of recycling businesses.

Buy-Back Centers: Buy-back centers purchase recyclables directly from the public and other recycling operations. The stationary buy-back centers can be manned or unmanned and provide an economic incentive to the public. Such centers can recover significant portions of the waste stream that might not otherwise be recycled. Buy-back centers often target aluminum cans because of their higher sales value and resulting profit margin. Newspaper, glass, corrugated cardboard, and high-grade waste paper are other materials that are often purchased at buy-back centers.

Mobile Buy-Back Centers: Mobile buy-back centers provide convenient access to City-sponsored recycling programs. Mobile buy-back centers can be located in different parts of the City on different days, at a fixed location, or a mobile unit can have a regular route travelled throughout the City.

Mobile Collection: Specially designed, mobile collection boxes would be placed in residential neighborhoods for the collection of recyclable materials. Residents would source separate recyclables from household refuse and deliver them to area containers for periodic collection. These mobile systems are unattended. Mobile collection can also include periodic community clean-up events for white goods collection.

Public Area Recycling Receptacles: Special recycling collection containers would be placed in designated public areas throughout the City, such as parks. In addition, containers would be placed near existing refuse receptacles in central locations for special events, festivals, and fairs.

Residential Curbside Collection: Curbside collection of recyclables for the household provides the maximum convenience to residents, and consistently recovers the highest tonnage of recyclables from the residential waste stream compared to drop-off and buy-back centers. Curbside programs may be designed in different ways to place different amounts of responsibility on the resident, the hauler, and the processing plant, to sort the materials separately from each other to ensure the highest value for those products sold in the marketplace. Cities are discovering that the greatest participation rates are seen when the City provides one or more containers, along with once-a-week collection on the same day as garbage pick-up.

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Multi-Unit Residential Collection: Apartment buildings, condominium complexes, and mobilehome parks generate large amounts of recyclable materials in small concentrated areas. Residents could bring their recyclables to a centralized storage area within the complex, where collection could be handled by a non-profit organization, private hauler, or the City's Resource Recovery System.

Commercial Collection Programs: Commercial recycling programs can target office buildings, restaurants, schools, supermarkets, construction sites, and hospitals.

Commercial recycling is responsible waste management, not necessarily a profit-making venture. Businesses do, however, realize avoided disposal costs, a benefit that is becoming more significant as the costs of waste management rise. Materials recovered in commercial recycling programs include corrugated cardboard, sorted ledger paper, newspaper, aluminum cans, glass, steel, plastic, asphalt, concrete, and wood waste. Some of these materials can be recovered by onsite sorting or more comprehensive salvaging and processing operations.

The City could start a program to reduce and recycle fast-food and restaurant waste beginning with a request for voluntary cooperation. Restaurants would have one year to establish effective source-reduction and recycling programs. If those programs were not in place after one year, fees and ordinances would be implemented. For added force, the City could pass a resolution declaring the City's intent to implement incentive fees on fast-food waste or require restaurants to provide patrons an opportunity to recycle if sufficient reduction and recycling programs are not in place by the deadline.

Office Paper Recovery: Several methods are available for the separation and collection of office waste paper. Three basic separation approaches are commonly used, they are dual wastebasket, central container system, and desktop containers. Each employee then becomes responsible for separating recyclables into the appropriate container and to empty the containers into centrally located barrels. When full, these barrels are removed to a storage area and replaced with empty ones. The recovery of high-grade papers, such as white ledger and computer print-outs, offers an important recycling opportunity for both public and private sector recycling.

Processing Alternatives

As part of the City's responsibility in developing a Source Reduction and Recycling Element, the processing of recovered and recycled materials will need to be addressed. The following summary provides a description of several processing alternatives.

Resource Recovery Station-Hand-Sorting

Recyclables are brought into a facility where they are hand-sorted by material types, stockpiled, baled, and then transported to market.

Resource Recovery Facility (MRF) Automated

Through this program, the City of Highland would encourage and/or establish a material recovery facility (MRF) which the City's refuse department could utilize.

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Material Recovery Facility - (MRF) Automated

Material recovery facilities are capable of accepting loads of mixed waste (commercial and residential) and sorting through the loads in order to extract recyclable material.

Mixed waste is dumped on the plant floor, visually inspected, and loaded onto a conveyor system. The co-mingled bottles and cans pass by a magnet where steel cans are removed, run through a can flattener, and loaded into a trailer for transport to a de-tinning plant. At the de-tinning plant, steel cans, which contain a small amount of tin, have the tin chemically reclaimed leaving a clean steel scrap suitable for steel making. The aluminum is air separated, crushed, and taken by trailer to a major aluminum company for re-refining and smelting into new can stock.

The rest of the material, consisting primarily of color-mixed glass, is conveyed past trained sorters who pick off clear, brown and green glass by color and throw each color of glass into glass crushers. After the glass is crushed, it is dropped into a rotating screen with holes too small to allow caps and neck rings to get through. Therefore, only the crushed glass, known as cullet, passes through the screen and onto a conveyor that moves it to outside storage containers. Full trailer loads of glass are shipped to glass manufacturers who melt down the material and use it to make new bottles.

Paper brought to the facility is unloaded on the other side of the plant where contaminants such as cardboard and plastic bags are removed by hand. The paper is placed loose in a large bin and is taken to a paper dealer who bales and ships the product to export customers.

Full Stream Processing (MRF) Co-Composting Facility

Full stream processing is a high-technology separation technique that processes all components of mixed municipal waste (not just recyclable). Full stream processing operations would include: a tipping floor for incoming mixed municipal wastes where large white goods are removed; conveyors, sorters, blowers, and trummels sort and then separate onto other conveyors, each of the recyclables; the residual material would then pass onto the compost operation where it would be mixed with sewage sludge to create a saleable compost product.

Landfill Salvaging

This alternative would promote salvage operations at the landfills which accept waste from the City of Highland. Salvaging includes hand picking and manually recovering recyclable material from trucks dumping at the landfill. Typically, a private company contracts with the County for exclusive salvage rights at the landfill.

Integrated Resource Recovery Facility (IRRF) = MRF + Waste to Energy

This concept would include a recycling building, composting facilities, and a waste-to-energy (WTE) facility. Technologies and services for sludge handling and composting, recycled materials handling, mass burning of municipal solid waste (MSW) and the production of both steam and electrical energy are combined for a total resource recovery program.

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The sludge handling and composting operation of the proposed facility would have systems capable of transporting, storing, and processing a wide range of sewage sludges, non-toxic industrial sludges, septic wastes, and readily separable organic wastes. These may include non-toxic organic wastes generated by food processing plants, distilleries, trailers manufactures, construction industries, and the like. The composting operation receives both electrical and steam power from the MSW incineration plant. Mixing of sludge with other composted materials is handled in closed buildings to prevent the release of odor and dust to the environment.

Energy

The availability of energy resources is a growing societal concern. Urban, rural, and agricultural land uses within the study area all rely on the availability of a continuing supply of affordable energy resources. However, recent experience has been that, unless society's awareness of the critical nature of energy availability is increased, significant dislocations in the economy and local quality of life can result. Energy conservation is not only necessary to the continued functioning of modern society, but provides immediate benefits to individuals and businesses in utility bill savings and improved air quality. The strategies provided for this Section propose energy efficient building and land use practices. Many other actions needed to conserve energy require cooperation with federal and State agencies, as well as with The Gas Company and Southern California Edison, which have indicated their interest in promoting energy conservation.

Telecommuni- cation Facilities

The telecommunications industry will experience rapid growth in the next two to five years. New communications technologies are being developed which may revolutionize the way residents in the City communicate, work, and live. What we now think of as standard telecommunications facilities such as cable television, telephone, television, mobile telephones, etc., will become more interactive systems capable of changing the lifestyles of residents within the City. One current example of such a change is the development of "Telecommuting Centers."

The Telecommuting Center uses existing telecommunications technology to set up office work stations closer to suburban communities. This allows employers to offer workers the opportunity to use a nearby telecommuting center instead of commuting via the road network to the office. Some of the benefits of Telecommuting include:

Employer

- **Productivity:** Employees will have undistracted time at workcenter, access to office support equipment, and should be more productive with a shorter, less stressful commute.
- **Cost Reduction:** Less employee absence, lower cost office space, and Air Quality Management District Regulation XV credit.
- **Flexibility:** No capital outlay; demonstrates hardware, software and remote work capabilities.

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Employee

- *Quality of Life:* Less time commuting, more time for family and community, a more comfortable life-style.
- *Cost Reduction:* Reduced fuel use, no parking fees, lower automobile maintenance.
- *Opportunities:* Access to jobs from more remote residences, greater ability to accommodate less mobile or handicapped individuals.

Community

- Traffic Congestion Relief
- Cleaner Air
- Balances Jobs and Housing

Other examples of changes in telecommunications technology include interactive cable systems linked to banking, city hall, or other public or social services, use of fiber optics in television transmission, and expansion of the mobile communications network.

It is important that the City monitor the advancement in telecommunications to ensure that opportunities to enhance the way people communicate are not hindered, or that new programs which might lead to new solutions to long-standing problems such as regional air quality are recognized.

Law Enforcement Facilities and Equipment

The primary concept for the provision of law enforcement services is an emphasis not only on law enforcement, but also on crime prevention. Thus, in addition to requiring that new development pay its fair share of expanding police facilities, acquiring new equipment, and training new personnel, new development will be required to be designed in such a manner as to reduce crimes of opportunity and to increase the surveillance ability of neighbors and the police.

Fire Facilities and Equipment

The primary concept for the provision of fire protection services is an emphasis not only on fire suppression, but also on fire prevention. Thus, in addition to requiring that new development pay its fair share of expanding fire facilities, acquiring new equipment, and training new personnel, new development will be required to be designed in such a manner as to reduce the potential for and the severity of fires.

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Educational Facilities

Master Plan for School/Recreation Facilities

Highland's vision is for master-planned school facilities which serve as a neighborhood focus in a broader context than traditional school planning and usage. While some school facilities in the past have been combined with parks, Highland's concept for joint school/park facilities builds on connections which create community facilities able serve the needs of neighborhood children, adults, and senior citizens in the daytime and evening hours.

These facilities would serve neighborhood needs far beyond education, through cooperative planning with the local school districts, city, and developers, and at the same time, create the social fabric for true community neighborhoods. Daytime activities would be focused on education. Parent and senior volunteers could assist in the library, cafeteria, administration, etc. These volunteers could also provide daycare or "latchkey" care, and a mutually beneficial relationship with the children could result. Adult activities such as adult education, club meetings, crafts, and social events could then be held in the evening hours.

Joint school/park facilities would be located centrally in neighborhoods, within convenient walking distance of most citizens who would use the facility.

The design of facilities would take into account multiple-use core facilities of permanent construction, peripheral construction of permanent and temporary nature, and an overall plan for flexibility of use and re-use. Existing facilities would also be reviewed in this community context to see how existing facilities can be better utilized to serve the immediate neighborhood.

School Development/Funding Process

Although the provision of school facilities is the responsibility of the local school district, the City of Highland will assist by working with the each school district to develop a methodology for the full mitigation of school impacts generated in the City in conformance with State law (see Figure II-C-4).

In developing a joint development and funding methodology, it is the City's commitment to ensure the following:

- that school planning focuses on providing facilities for activities in excess of traditional school planning;
- that fees collected in excess of the current \$1.65/square foot requirement be allocated to directly benefit those students within the City; and
- that the City of Highland will work with the San Bernardino Unified School District and the Redlands Unified School District to establish financing techniques which ensure construction of new facilities that will be ready for occupancy and use at the time facilities and services are required. This includes:
 - establishing generation factors and utilization ratios for residential units;

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- establishing a construction cost index for new school facilities consistent with State and regional guidelines;
- developing an inventory of potential funding sources for applicants of proposed new developments; and
- developing an index of potential funding sources and coordination of resources by joint-use agencies required to develop new facilities or improve existing facilities.

Adapt and redevelop existing school facilities to function as multiple-use cores to give identity to existing neighborhoods:

- Identify and compare the boundaries of existing school attendance areas with existing neighborhood areas and with city limits and sphere of influence areas.
- Inventory existing facilities as they relate to joint use school/community center concepts for both school and recreational use.
- Develop improvement plans for existing facilities to attain joint use potential comparable to that planned for new facilities.
- Develop a joint City - Redlands/San Bernardino City Unified School District strategic facilities plan designating all future general and specific sites for all grade levels.

The City of Highland will work with the Redlands and San Bernardino City Unified School Districts to establish financing techniques which ensure construction of new facilities that will be ready for occupancy and use at the time facilities and services are required. This includes:

- establishing generation factors and utilization ratios for residential units;
- establishing a construction cost index for new school and park facilities;
- developing an index of potential funding sources for applicants of proposed new developments; and
- developing an index of potential funding sources and coordination of resources by joint use agencies required to develop new facilities or improve existing facilities.

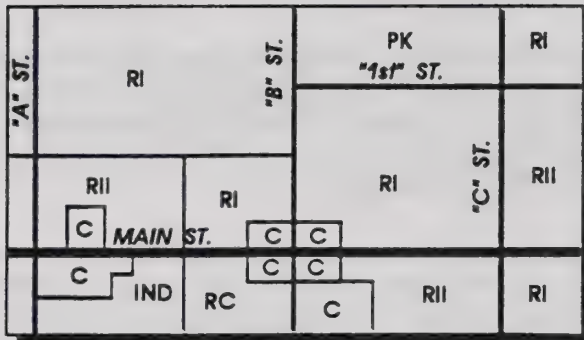
Other Facilities and Services

The primary General Plan concept for ensuring adequate cultural and other facilities to meet the needs of Highland residents is to work with local private and public, cultural and social service agency groups and organizations to leverage funds, and to pursue the development of joint-use facilities.

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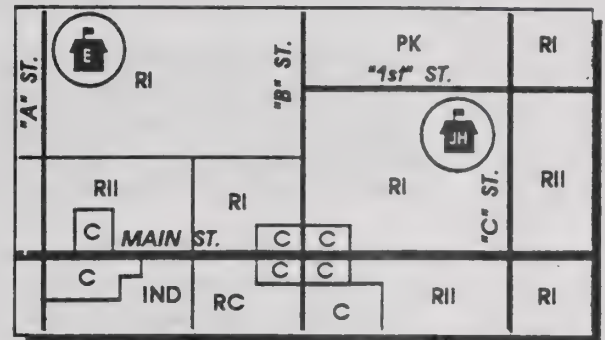
Public Services and Facilities

Figure II-C-4
School Impact Mitigation Process



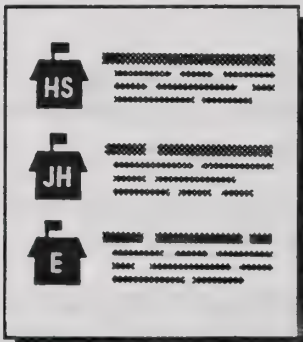
Step 1:

All future land uses and density ranges are defined on the land use map. This includes developed and undeveloped land.



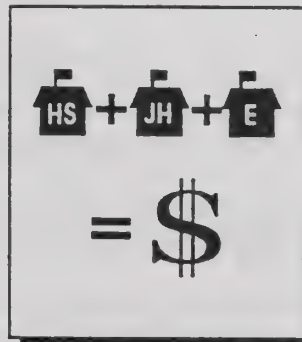
Step 2:

Based on the above land use plan, the location of future populations and resultant student generation can be determined. Schools can then be located. The schools would not be site specific, only the general area where a school is needed would be identified.



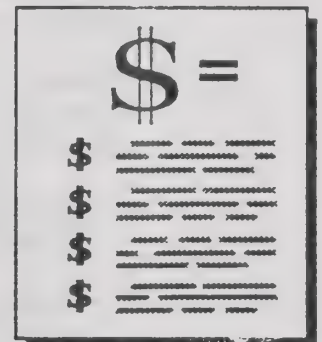
Step 3:

Standards for each type of school facility would be clearly defined in the plan.



Step 4:

Based on the identified school needs and the facility standards, a clear cost can be established for the total facility needs.



Step 5:

A funding program can then be established which can be used to allocate the known costs (per above), to the known proposed development — utilizing the range of all known funding sources, which are also identified in the plan.

A further expansion of the school facility is the consideration of the facility as a community facility, serving such possible needs as senior day care, senior meals programs, latch key care of the youth by community volunteers, community volunteers in library and other school activities, the use of facilities in evening hours for adult education and various neighborhood and community activities, and recreational opportunities. Diversifying the use of the facility opens up new opportunities for the consideration of shared funding and maintenance to the extent that the facilities are used for multiple purposes. In addition, the integration of school facility activities with senior and the immediate neighborhood gives school facilities a new perspective as seen by the community. Senior residents would see a direct benefit to them of school facilities having broader use as a community facility. This also has the potential of creating broader funding support for school bond issues and other funding opportunities.

Public Services and Facilities

Provision of Services

In determining the optimal method of providing services to its residents, the City of Highland needs to maintain a balance between certain goals. As is the case for financing capital improvements, the City needs to select methods of providing services which are **effective, equitable, and efficient**. In addition, the City needs to consider the extent to which it needs **control** over the provision of municipal services to ensure implementation of City policies and priorities.

With minimal effort, the City could establish formal ongoing coordination efforts with the agencies providing critical services within Highland. The establishment of a "Public Facilities Task Force" consisting of area service providers could provide a continuing forum for sharing information, identifying and resolving issues of common interest, and coordinating policies and priorities between agencies. If established, the task force could consist of the City, County Fire Department, Sheriff, public utility companies, East Valley Water District, the San Bernardino and Redlands Unified School Districts, County Flood Control District, and others.

Within the City of Highland, a reliance on outside agencies to furnish municipal services has so far provided acceptable levels of service within existing budget limitations. It is not likely that the City could afford to directly provide many of the services now provided by outside agencies; however, as the City matures and its revenue base expands, different methods of service provision might be explored.

Alternate means of service provision which might be explored in the future to improve the effectiveness, equity, and/or efficiency of municipal services are outlined below along with methods to increase local control over public service policies and priorities.

- Establishment of a Citywide Mello-Roos Community Facilities District could be considered as a means to enhance the level of police and/or fire protection services within Highland.
- The City could consider contracting with the City of Redlands or San Bernardino for police and/or fire protection services in lieu of services being provided by the County if the City could, at some time in the future, provide such services to Highland more efficiently or effectively than could the County.
- Highland could consider directly hiring a police chief or fire chief as a city employee, and then contracting for departmental services.
- Establishment of an independent fire protection district with a locally elected Board of Directors could be considered. Alternatively, the City Council could manage the fire district as a subsidiary district in a manner similar to the City of Rancho Cucamonga and the Foothill Fire District.
- The City of Highland could consider the feasibility of establishing itself as the legal water and/or sewer agency within lands to be developed, and contract with East Valley Water District for actual service provision.

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Table II-C-8
Public Services and Facilities Performance Standards

Facility/Service	Performance Objective
Schools	School capacity available to meet projected enrollment as per City joint Redlands and San Bernardino City Unified School District Facilities Planning Program.
Water Systems	Adequate fire flow as established by the California Department of Forestry and Fire Prevention; sufficient storage for emergency situations.
Sanitary Sewers	Restricted flow only during peak-day, peak-hour conditions.
Sewage Treatment	Remain within the rated capacity of the treatment facility; have capacity available for five years projected growth.
Flood Control	Protection of structures for human occupancy from the 100-year flood; facilities to be provided as required concurrent with development.
Police Protection	Four (4) minute average response time for emergency calls within the City.
Fire Protection	Provide a response time of five (5) minutes for fire and emergency medical within urban areas; seven (7) minute response time for emergency calls within rural areas. Provide Fire Department staffing and deployment adequate to: • provide concurrent response to one emergency medical call and one structure fire call, meeting minimum acceptable staffing requirements for each call with normal on-duty and paid call firefighters; • provide Uniform Fire Code and National Fire Code Standards for Fire Protection and Fire Prevention Services.
City Administrative Facilities	Prepare a Civic Center Master Plan; (maintain 1,500 square feet per 1,000 projected population increase), programmed for construction over the next five to ten years thereafter.
Libraries	10,000 square feet of library space per 36,000 residents; 18.3 weekly service hours per 10,000 population; 2.82 books per capita.
Solid Waste	Adequate number of refuse vehicles and staffing to maintain once weekly pickup of solid wastes; adequate number of street sweeping vehicles and staffing to sweep arterial and other selected streets on a bi-weekly basis.
Other Public Buildings and Facilities	Sufficient number and size to provide required services.

Source: Planning Network, 1992.

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 1: Ongoing coordination of development activity with the provision of public services and facilities in order to eliminate gaps in service provision, maximize the utilization of existing and proposed public facilities, provide efficient and economical public services, and to achieve the equitable sharing of costs of such services and facilities.					
Objective 1.1: Maintain adequate systems for water supply and distribution; wastewater collection, treatment, and disposal; solid waste collection and disposal; and energy distribution which are capable of meeting the needs of the residents of Highland.					
1.1.1	Prior to permitting a major extension of services or utilities to facilitate changes in land use, conduct a thorough review of all social, economic, and environmental factors associated with that extension; require the implementation of appropriate mitigation measures or prohibit the extension.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.1.2	Ensure that existing residents and businesses are not burdened with the cost of financing infrastructure aimed at supporting new development or the intensification of existing development.	Ongoing	Existing Program	Community Development, Public Works	Department Budget
1.1.3	Unless otherwise approved by the City, ensure that public water, sewer, drainage and other backbone facilities needed for a project phase are constructed prior to or concurrent with initial development within that phase.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.4	Place the ultimate responsibility with the project sponsor for ensuring that all necessary infrastructure improvements (including system-wide improvements) needed to support a project development are available at the time that they are needed.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.5	Require that existing public services and facilities deficiencies be corrected prior to or concurrent with the development of the area.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.6	Coordinate the long-term provision of utility services, including water, wastewater, electricity, natural gas, solid waste, etc. to assure adequate future levels of services for City residents.	Ongoing	New Program	Community Development, Public Works	Department Budget

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
1.1.6.a) Discuss plans by the East Valley Water District provide additional water capacity for the region.	Initiate coordination process 24 months post General Plan adoption - then Ongoing	New Program	Community Development	Department Budget
1.1.6.b) Using the ideas discussed in the Concepts, Options and Alternatives Section of the Public Services and Facilities Element, work with the East Valley Water District and local elected representatives to better define the future availability of water for Highland and its sphere of influence.	Ongoing	New Program	Community Development	Department Budget
1.1.6.c) Discuss with the East Valley Water District the funding and scheduling of any additional sewage facilities to serve the Highland area or its sphere of influence.	Provide an Ongoing dialogue with EVWD to ensure implementation	New Program	Community Development	Department Budget
1.1.6.d) Discuss with the involved agencies the long-term supply of reclaimed wastewater, including service to potential future uses within the City or its sphere of influence.	Provide an Ongoing dialogue with EVWD to ensure implementation	New Program	Community Development	Department Budget
1.1.6.e) Discuss with the local gas and electric companies the location and timing of additional energy facilities needed within Highland or its sphere of influence.	Provide an Ongoing dialogue with service providers to ensure implementation	New Program	Community Development	Department Budget
1.1.6.f) Discuss with County Solid Waste Management the potential for access to rail haul or other regional solutions for long-term limits on local landfill capacity.	Provide an Ongoing dialogue with service providers to ensure implementation	New Program	Community Development	Department Budget
1.1.7 Direct future growth to areas with adequate existing facilities and services, areas which have adequate facilities and services committed, or areas where public services and facilities can be economically extended.	Ongoing	New Program	Community Development	Department Budget
1.1.8 Using the guidelines describe in Table II-C-7 develop an infrastructure review and reporting system as part of the implementation of AB 1600 and the ongoing Capital Improvement Program to monitor the capacity of existing facilities in order to ensure that a proposed development does not overwhelm the existing facilities.	Develop system 36 months post General Plan adoption	New Program	Community Development with assistance from all City departments	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.1.9	In coordination with area service agencies and San Bernardino County, conduct and maintain an inventory of the availability and adequacy of public services and facilities. Use the information to coordinate capital improvement programs and as the basis for making determinations as to the adequacy of community facilities.	Develop inventory 36 months post General Plan adoption - maintain Ongoing inventory	New Program	Community Development, Public Works	Department Budget
1.1.9.a)	Establish procedures for the regular exchange of information regarding proposed development and availability and adequacy of public services and facilities.	Establish procedures 8 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget
1.1.9.b)	Take a proactive role in ensuring that the flow of information between agencies which provide services to the area is maintained.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.10	Utilize the performance criteria contained in Table II-C-9 to determine the adequacy of public services and facilities, and to establish requirements, fees, and exactions to be provided by new development within the City of Highland. • Maintain a development review process which places the ultimate responsibility on the project sponsor for ensuring that necessary infrastructure improvements (including systemwide improvements) needed to support new development are, in fact, available at the time they are needed. • Revise City applications and/or environmental forms as necessary to require that applicants for new development provide sufficient information regarding their project to permit the City to determine the significance of potential impacts on existing services and facilities, and to determine the specific facilities and services which will be necessary to support project buildout consistent with the performance standards outlined in Table II-C-9.	Ongoing	New Program	Community Development, Public Works	Department Budget

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
• Require that all new development pay the applicable Development Impact Fees established by the City Council. • Maintain flexibility in the collection and application of Development Impact Fees to permit the construction of master planned facilities in lieu of fees when the City determines that it is in the public interest to do so. • Where the value of the services and facilities required to support buildout of a proposed development consistent with the provisions of Table II-C-9 exceed established Development Impact Fees, require the construction of such facilities as a condition of approval, and enter into an agreement with the developer for reimbursement from future development fees for the excess costs. Such reimbursements shall be from future fees collected for the specific excess facilities which the initial developer was required to construct.				

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.1.11	In the event that the public service performance criteria contained in Table II-C-9 are not being met, the following conditions shall apply: - Where the performance criteria contained in Table II-C-9 are not being met due to needs created by existing development, the City Council shall adopt in its Capital Improvement Plan a program to ensure that the performance criteria will be met at the earliest possible date. - In instances where the performance criteria contained in Table II-C-9 are being exceeded prior to approval of a proposed development as the result of existing development, require that the proposed development provide such facilities as are necessary to ensure that performance criteria are met for new public facilities and services provided to the development, and that existing public services and facilities are not further downgraded.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.12	Permit the construction of interim facilities to serve new development only when it is found that development of interim facilities will not impair the financing or development of master planned facilities. Where new development is permitted to construct interim facilities, provide credit against Development Impact Fees only to the extent that the interim facilities will result in a cost savings for master planned facilities. In such cases, limit the credit to the value of the master plan facility savings, without consideration for the total cost of the interim improvement.	Ongoing	New Program	Community Development, Public Works	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.1.13	Conduct a periodic annual review of development impact fees, user charges, and mitigation fees in accordance with the provisions of AB 1600 to ensure that the charges are consistent with the costs of improvement and maintenance and that public services and facilities are being expanded in a cost-efficient manner. Utilize the public service performance standards contained in this Plan as the basis for this review.	Periodic Review	New Program	Community Development, Finance Department	Department Budget
1.1.14	In addition to the payment of Development Impact Fees, require that planned communities participate in the development of public infrastructure through the following methods:	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.14.a)	Require that all new specific plan or planned unit development projects include an approved development agreement which specifies the specific timing of infrastructure improvements in relation to project development.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.14.b)	Ensure that all new specific plans conduct an annual review of improvements and produce an annual report in a format which can be easily included in the City's infrastructure assessment and reporting system.	Annually	New Program	Community Development	Department Budget, Development Fees
1.1.15	Review development proposals within the unincorporated portions of the Highland General Plan study area with regard to potential impacts that such development will create within the City of Highland.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.15.a)	Work with the County to implement a system of requiring appropriate mitigation so as to ensure that new unincorporated development will not impact services and facilities within the City of Highland.	Ongoing	New Program	Community Development	Department Budget
1.1.16	Ensure that all major extensions of public services and facilities are accompanied by a thorough examination of the social, economic, and environmental factors associated with the extension.	Ongoing	New Program	Community Development	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.1.16.a)	Ensure that development(s) for which services and/or facilities are being extended will generate sufficient municipal income to pay for City operations, maintenance, and replacement.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.17	Permit an assessment district alternative to Development Impact Fees for large scale developments undergoing urbanization when a single owner of small number of owners are involved, and when it is in the public interest to do so.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.18	In coordination with local service agencies establish the full potential for buildout of land uses west of City Creek by developing a Western Area Infrastructure Study which identifies: • Available existing public services and facilities • Service and facilities deficiencies • A program to ensure necessary improvements to support General Plan land uses.	Initiate study 12 months post General Plan adoption	New Program	Community Development, Public Works Department	Department Budget
Objective 1.2: Maintain a balance between available infrastructure facilities and public services and the type, rate, intensity, and timing of new development so as to eliminate potential impact of new development upon the services and facilities enjoyed by existing residents and businesses.					
1.2.1	Permit new developments and the intensification of existing development only where and when adequate public services and facilities can be ensured.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.2.2	Prior to the issuance of commercial building permits, or the recordation of residential tract or parcel maps, ensure the availability of adequate fire flow by requiring the testing of all fire hydrants in the vicinity of the project at the applicant's expense, and in the absence of adequate flows, require either the installation of on-site fire protection devices or improvements that upgrade the area's water system to accommodate adequate flows.	Ongoing	New Program	Community Development, Fire Department, EVWD	Department Budget, Development Fees, other agency budgets
1.2.3	Maintain current information concerning the capability of public services and facilities provided by the City and other agencies within the City.	Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.2.4	Encourage all public service agencies providing services within the City of Highland to also keep current information regarding their service capabilities.	Ongoing	New Program	Community Development	Department Budget
Objective 1.3: Establish and implement comprehensive equitable and legally defensible solutions to the financing of public facilities and services.					
1.3.1	Establish a development fee structure which ensures that costs for new capital facilities and expansion of existing facilities necessitated by proposals for new development and intensification of existing development are internalized by those projects.	Establish fee structure 6 months post General Plan adoption - Ongoing	New Program	Community Development	Department Budget
1.3.2	Promote the establishment of benefit assessment districts, Mello-Roos districts, and other financing mechanisms, in combination with programmed capital improvements to facilitate the provision of desired community facilities.	Ongoing	New Program	Community Development	Department Budget
1.3.3	Ensure that new methods of funding public facilities include the concepts of effectiveness, equity, efficiency, and control as outlined in the Concepts, Options, and Alternatives Section of the Public Services and Facilities Element.	Ongoing	New Program	Community Development	Department Budget
Goal 2: Cooperative school/public facility planning, which will ensure provision of adequate school facilities and quality educational programs in a manner consistent with the goals and strategies of the Highland General Plan with respect to facility location, use type, timing, funding, recreational and social joint use programs.					
Objective 2.1: Ensure that all Highland residents have access to high quality local educational facilities, regardless of their socioeconomic status or location within the City.					
2.1.1	Work closely with the Redlands and San Bernardino Unified School Districts on an ongoing basis to resolve issues such as joint use of facilities, location of new facilities, and alternative use of vacant or unused sites.	Ongoing	New Program	Community Development	Department Budget

Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
2.1.2 Require that new development be responsible for providing the necessary funding/resources to establish facilities commensurate to their project impact. In cases where existing school capacity does not exist to support new development, require the implementation of appropriate funding mechanisms permitted by law so as to ensure the availability of adequate facilities to support project development. Potential financing avenues include: • Contract with developer to provide funds for schools (over and above \$1.65/square foot and in conformance with State law). • Land dedications. • Implement lease back turn-key program. • Establish special assessment district financing (such as Mello-Roos Community Facilities Districts) for the area proposed for development.	Ongoing	Expanded Existing Program	Community Development	Department Budget, Development Review Fees
2.1.3 In requiring that new development within the City of Highland pay fees established under State law, it is the expectation of the City of Highland that all development fees collected from development projects within the City be applied to the acquisition and construction of schools which serve the residents of those projects.	Ongoing	Expanded Existing Program	Community Development	Department Budget Development Review Fees
2.1.4 Coordinate development activity with the school district by: • participating with the School District in joint planning efforts; • establishing a joint task force of City, School District, and development community representatives to identify additional means of funding school construction; • notifying school districts of proposed development applications early in the review process;	Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	- requesting that school districts indicate the level of facilities available to serve development projects requiring discretionary review; and - establishing a clear methodology for determining the impacts of development within the City of Highland upon school facilities.				
2.1.5	Work with the San Bernardino Unified School District and Redlands Unified School District to prepare a Master Plan of Schools which outlines specific sites needed to meet future school facility demands.	Ongoing	New Program	Community Development	Department Budget
Goal 3: Maintenance of a system of cultural facilities and social services sufficient to meet the needs of Highland residents.					
<i>Objective 3.1: Ensure the provision of cultural facilities, such as educational institutions, museums, and performing arts facilities, to meet the needs of Highland residents.</i>					
3.1.1	Pursue the development of a civic center, including a multi-use community center.	Ongoing	New Program	Community Development	Department Budget
3.1.2	Work with surrounding jurisdictions to establish joint development of cultural facilities of regional significance, such as a performing arts center and cultural museum.	Establish contact with surrounding jurisdictions 48 months post General Plan adoption. Complete feasibility study 36 months post General Plan adoption	New Program	Community Development	Department Budget
3.1.3	Explore the possibility of locating a major institution of higher learning in Highland.	Ongoing	New Program	Community Development	Department Budget

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 4: Achieve a fiscally solvent, financially stable community.					
Objective 4.1: Provide sufficient opportunities for retail and other nonresidential commercial and office uses as is necessary to ensure adequate municipal income to finance desired community amenities.					
4.1.1	Promote the intensification of the sales tax-generating potential of existing commercial and office nodes within the City.	Ongoing	New Program	Community Development	Department Budget
4.1.2	Work with the State to revise the distribution of sales taxes to local agencies to reflect a combination of the location where the sales tax was collected and per capita distribution based on population.	Ongoing	New Program	Community Development	Department Budget
4.1.3	Analyze the municipal fiscal desirability and necessity of developing high sales tax - low traffic generating uses along the Foothill Freeway.	Complete study by 36 months post General Plan adoption	New Program	Community Development, Finance Department	Department Budget
4.1.4	Pursue the expansion of municipal boundaries to areas which can be utilized to assist in the provision of sufficient municipal income to provide an adequate level of services and facilities for Highland residents.	Ongoing	New Program	Community Development	Department Budget
4.1.5	Prepare and maintain a municipal cost/revenue model to define City revenue and cost characteristics, and as a tool for the determination of the amount and intensity of additional revenue producing uses needed within the City.	Prepare model 48 months post General Plan adoption	New Program	Community Development, Finance Department	Department Budget
Objective 4.2: Promote efficiency in the provision of public services and facilities.					
4.2.1	Conduct an annual review of user charges, development fees, and public facilities impact mitigation fees to ensure that the charges are consistent with the costs of improvement and maintenance, and that public services and facilities are being expanded in a cost-efficient manner.	Periodic Review	New Program	All City Departments	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Objective 4.3: <i>Promote a balance of public and private provision of services and amenities to the community.</i>					
4.3.1	Identify and pursue opportunities for private provision of services and facilities within the City of Highland, including joint public/private efforts.	Ongoing	New Program	Community Development	Department Budget
4.3.2	Explore joint or cooperative use of facilities owned or constructed by other public agencies.	Ongoing	New Program	Community Development	Department Budget

OPEN SPACE AND CONSERVATION

Introduction

Purpose and Function

Highland recognizes its role as steward of all lands within its jurisdiction. As a consequence, the City intends to take an active role in the management of its natural and open space resources for the benefit of the community now and in the future.

The Open Space Element designates "open space land" which is defined by Section 65560(b) of the Government Code as "any parcel or area of land or water which is essentially unimproved and devoted to open space use..." Open space use is defined to encompass four principal categories: natural resources, managed production of resources, outdoor recreation, and public health and safety.

The Conservation Element is required for the purposes of establishing a management plan for natural resources to prevent waste, destruction, or neglect. This Element of the General Plan is concerned with the conservation, development, and utilization of natural resources such as water, soils, rivers, harbors, wildlife, minerals, and other natural resources.

The issues required of a Conservation Element overlap those of the Open Space Element which deal with "open space for the preservation and managed production of natural resources." As a result of this overlap and interdependency, the two elements have been combined, which is permitted under State law.

It is the intent of the Open Space and Conservation Element of the Highland General Plan to:

- Provide for an orderly transition of agricultural lands to alternative uses.
- Identify limits on the natural resources needed to support urban and rural development within the City and its sphere of influences, and ensure that those resources are used wisely and not abused.
- Create and retain an open space system which will conserve natural resources, preserve scenic beauty, promote a healthful atmosphere, provide open space for outdoor recreation, and protect the public safety.
- Provide for the continued availability of committed open space areas to ensure their use for future generations.

The Open Space and Conservation Element has been organized to address the following open space and conservation issues:

- Agricultural Lands
- Water Resources
- Biological Resources
- Archeological Resources

Open Space and Conservation

- Mineral Resources
- Parks and Recreation
- Scenic Highways
- Multi-Use Trails

Goals Summary

Goal 1

Identify limits on the resources needed to support existing and future uses within the City of Highland and its sphere of influence, and ensure that those resources are protected, used wisely, and not abused.

Goal 2

Create and maintain an open space system which will conserve natural resources, preserve scenic beauty, promote a healthful atmosphere, provide open space for outdoor recreation, and protect public health and safety.

Goal 3

To develop and maintain a citywide multi-use trail system which enhances the quality of life of Highland residents.

Goal 4

Provide a viable opportunity for Highland residents to use non-motorized transportation for trips within the City.

Goal 5

A trail system which interconnects all portions of the City with appropriate public facilities and recreational amenities, and provides connections to trails in adjacent jurisdictions, while maximizing access for all persons, including persons with limited mobility.

Goal 6

To develop and promote a trail system that will protect the health and safety of all users.

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Existing Setting

Agriculture

The City of Highland has agricultural uses which have been inventoried as important farmlands by the California Department of Conservation, Division of Land Resource Protection, and the U.S. Department of Agriculture - Soil Conservation Service. These farmlands are concentrated east of Boulder Avenue within an area roughly defined by Greenspot Road (south), Webster Street (west), Base Line (north), and Church Street (east). The 1,885 acres of farmlands inventoried in this area include six categories: prime farmlands, potential prime farmlands, Statewide important farmlands, potential Statewide important farmlands, locally important farmlands, and unique farmlands.

The primary agricultural crop in the City is citrus. Further analysis indicates that much of the important farmlands have already been urbanized. Figure II-D-1 illustrates the 646 acres of important farmlands remaining in the City. Table II-D-1 below tabulates the remaining acres of prime, unique, and Statewide farmlands by category.

Table II-D-1
Farmland

Farmland Category	Total Acres	Remaining Undeveloped Acres
Prime	888	470
Potential Prime	99	0
Unique	487	129
Statewide	275	47
Potential Statewide	9	0
Local	127	0
Total	1,885	646

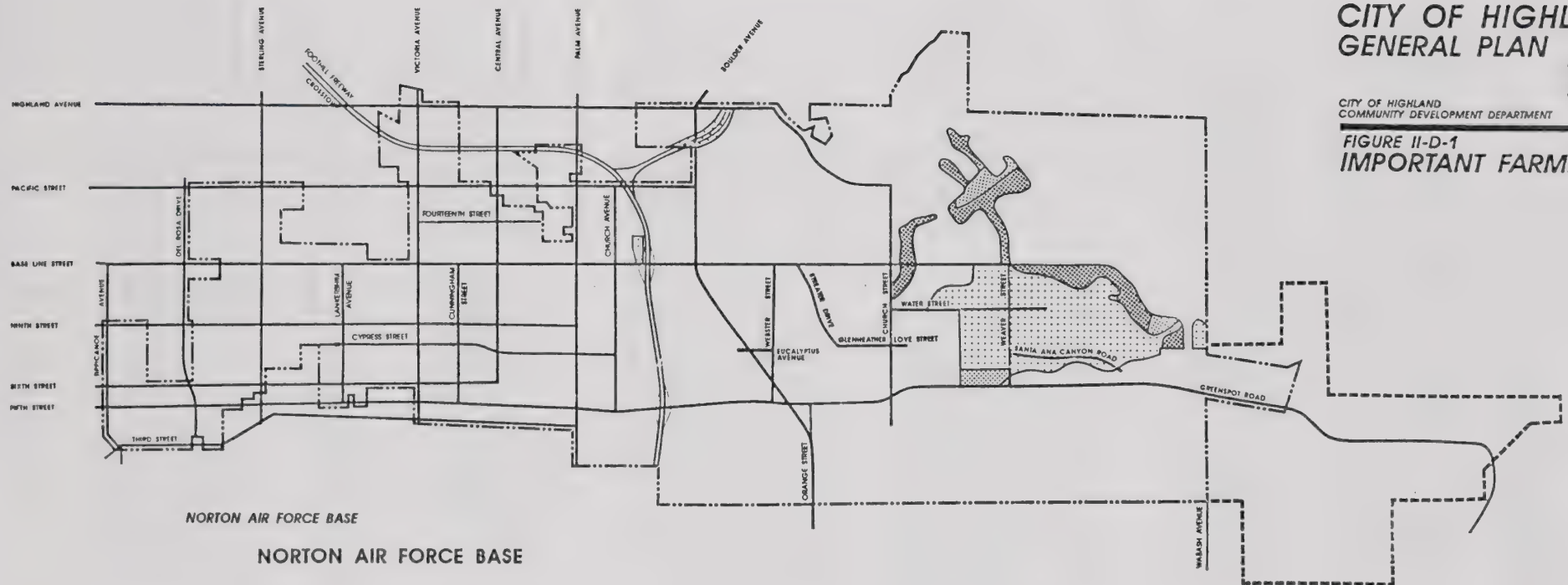
Source: U.S. Department of Agriculture, 1991

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-D-1
IMPORTANT FARMLANDS



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  PRIME
-  UNIQUE
-  STATEWIDE



Open Space and Conservation

The City, as well as the region, is experiencing a strong demand for housing and urban development. Because of this demand and the inevitable conflicts between urbanization and agriculture, the City's agricultural lands are being depleted. Water problems have also created trouble for agriculture in the area. Severe drought conditions, as well as high costs for crop water have made agricultural uses very costly and inefficient. Because of these inefficiencies, land owners have sold or developed agricultural lands into higher dollar residential and commercial uses.

According to the City of Highland Community Development Department, approximately 90 percent of the existing farmland has been slated for development. Conversion of agricultural areas to residential uses encompasses a number of potential issues, including isolated or "checkerboard" development, the reservation of open space "buffers," and future land use compatibility.

Water Resources

One of the fundamental long-term constraints for both urban and rural development and agricultural preservation is the availability and quality of water. Water availability has been, is, and will continue to be the primary resource constraint facing Highland. Future development in the area will have three major impacts on water resources. First, the ability for precipitation to seep into the ground and recharge the groundwater basin may be reduced because the present natural ground cover will be replaced by pavement and structures that do not permit percolation. Second, studies nationwide have indicated that storm waters from urban areas are generally more polluted than storm waters from natural areas. Finally, an increased demand on the existing groundwater basin may cause major impacts.

Water is provided by the East Valley Water District. A Master Plan of Water was prepared in 1986. The Water District estimates the year 2015 District population at approximately 110,000 persons. By using the District's population projection, and assuming that current trends in the percentage of City of Highland, City of San Bernardino, and unincorporated lands within the District, it can be estimated that in the year 2015, the City of Highland will have approximately 66,000 of the persons to be served. It is expected the demand for water to be 16.8 million gallons per day (mgd) average by 1995 and 19.0 mgd by the year 2015. The East Valley Water District is currently planning and developing its facilities in anticipation of these demands.

Groundwater

Currently, the East Valley Water District uses groundwater as its sole source of supply. The groundwater is extracted from an aquifer known as the Bunker Hill Basin. The East Valley Water District is within the Bunker Hill Basin. Most of the East Valley Water District's wells currently pump water through 16- or 20-inch diameter casings and have depths exceeding 600 feet.

Water Quality

Due to State requirements, groundwater quality has continually met both the State of California and Environmental Protection Agency drinking water standards, or the water from a non-compliant well is not distributed.

Extraction from the existing aquifer is restricted by the Settlement Document in the Western Municipal Water District Suit involving defendants in the San Bernardino Basin area. However, the East Valley Water District can obtain additional rights to groundwater extractions by adding additional land area to the District through annexation procedures similar to a city annexation. In accordance with East Valley Water District Policy, these rights can be obtained to surface flows or to groundwater, amounting to three acre-feet of water per year for each acre of land annexed.

Open Space and Conservation

Groundwater extraction is not a problem as far as available quantity is concerned. Energy requirements, drought, and potential contamination, however, put continued pressure on unlimited use of groundwater.

Surface Water

Surface water is available to the East Valley Water District through District rights to local streams. Among the most potentially developable water rights are the Santa Ana River, City Creek, and Plunge Creek. Some of the flows from these streams are currently diverted by other water agencies for groundwater recharge, or they are used for agricultural crops. The East Valley Water District has water rights in these streams through its stock ownership in such irrigating companies as the City Creek Water Company, the North Fork Water Company, and the Bear Valley Mutual Water Company. In addition, the East Highlands Ranch Company has pledged its rights in Plunge Creek to the East Valley Water District in exchange for water services.

"For a discussion of the options regarding the use of surface water as a potential future resource, please refer to the Water Facilities Section of the Public Services and Facilities Element."

State Water Project

State Water Project represents an alternative source of water in addition to groundwater and local surface waters. The San Bernardino Valley Municipal Water District (Valley District) imports State project water through a contract with the State of California. The Valley District has an entitlement to 102,600 acre-feet of water from the State.

State project water is delivered through the East Branch of the California Aqueduct to Silverwood Lake, which is located on the north side of the San Bernardino Mountains. Water for delivery to the San Bernardino area passes through a tunnel to the south side of the mountains and to the Devil Canyon Power Plant. After passing through the power plant, the water is discharged to an afterbay. The afterbay is also the intake to the Valley District's Foothill Aqueduct, which traverses the east San Bernardino area until it reaches the mouth of the Santa Ana Canyon. Along the route of the Aqueduct there are many turnouts. Four turnouts (Patton Turnout, City Creek Turnout, Santa Ana Low Turnout, and North Fork Turnout), State project water can be delivered to the East Valley Water District through these four turnouts, either by direct connection or through surface spreading or recharge.

The East Valley Water District can obtain State project water by a purchase agreement or through an exchange program. The exchange program is made possible by an exchange agreement called the Santa Ana River Mill Creek Cooperative Water Project Agreement. Under the exchange program, the East Valley Water District can take water at the various Valley District turnouts. In return, the East Valley Water District would forego its entitlements to the Santa Ana River water, which would be delivered to the exchange program for further allocation.

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Biological Resources

The native plants and animals which once inhabited the Highland area have undergone considerable transition over the years. Urban, rural, and agricultural development have removed large areas of natural vegetative cover. Wildlife that once inhabited the Valley floor have been forced to nearby undisturbed areas to the north, northeast, and east of the city limits. Within the City, several significant biological habitats and plant species remain. Plunge Creek and City Creek are the largest watercourses that traverse the City. Remnant stands of mature riparian vegetation line the riverbeds, these species include the California Sycamore, Elderberry, Willows, and Coast Live Oak.

Certain plant and animal species, and sometimes whole communities may be considered to be sensitive for a reason or combination of reasons related to rarity, limited availability, unusual characteristics, prime condition, and pending threats. In some instances, the threat to these species or their habitats warrants official State or federal rare, threatened, or endangered status. The California Natural Diversity Data Base (CNDDB) reports the occurrence of sensitive biological elements within and in the vicinity of the Highland study area. Each of these is listed in Table II-D-2. In addition, Figure II-D-2, (Biological Sensitivities Map) depicts the location of Special plants, natural communities and their specific occurrences within the study area.

Table II-D-2
Sensitive Species in the Highland Study Area

COMMUNITIES

- Riversidian Alluvial Fan Sage-Scrub

In addition, the following "high inventory priority" habitat types may also occur within the Highland study area:

- Valley Needlegrass Grassland
- Wildflower Field
- Freshwater Seep
- Southern Coast Live Oak Riparian Forest
- Southern Cottonwood-Willow Riparian Forest
- White Alder Riparian Forest
- Southern Sycamore-Alder Riparian Woodland
- Southern Willow Scrub
- California Walnut Woodland

PLANTS

The following plant species are the only federal and State endangered plant species that are reported by the California Natural Diversity Data Base as occurring within the Highland study area:

- Santa Ana River Wooly Star (*Eriastrum densifolium sanctorum*) (FE, CE)
- Slender-Horned Spineflower (*Dodecahema Leptoceras*) (FE, CE)

Open Space and Conservation

The following plant species are reported just outside the study area and might also be expected in the study area:

- Slender-Horned Centrostegia (*Centrostegia leptoceras*) (FE, CE)
- Parish's bush mallow (*Malacothamnus parishii*) (F2)
- Thread-leaved Brodiaea (*Brodiaea filifolia*) (CE, F1)
- Many-stemmed Dudleya (*Dudleya multicaulis*) (F2)
- Marsh Sandwort (*Arenaria paludicola*) (F1)
- Los Angeles Sunflower (*Helianthus nuttallii parishii*) (F1)
- Pringle's Monardella (*Monardella pringlei*) (F1)
- Hall's monardella (*Monardella naeacantha hallii*) (F2)
- Payson's caulanthus (*Caulanthus simulans*) (F2)
- Nevin's barberry (*Mahonia nevinii*) (CE, F1)
- California bedstraw (*Galium californica primus*) (F2)

FISHES

- Santa Ana Sucker (*Catostomus santaanae*) (CSC)
- Pacific Speckled Dace (*Rhinichthys osculus carringtoni*) (CSC)

REPTILES AND AMPHIBIANS

- San Diego Horned Lizard (*Phrynosoma coronatum blainvillei*) (CSC,F2)
- Orange-throated whiptail (*Cnemidophorus hyperythrus*) (CSC,F2)

The following species are reported from the Santa Ana River in Orange County and might also be expected in the study area:

- Western Pond Turtle (*Clemmys marmorata*) (F2)
- Silvery Legless Lizard (*Aniella pulchra*) (locally uncommon) (CSC)

Other species that may be expected based upon distribution and habitat preferences:

- San Bernardino Mountain Kingsnake (*Lampropeltis zonata parvirubra*) (SA)
- Two-striped Garter Snake (*Thamnophis couchi hammondi*) (Locally uncommon)
- Arroya Toad (*Bufo microscaphus californicus*) (CSC, F2)
- California Red-legged Frog (*Rana aurora draytoni*) (CSC,F2)

BIRDS

- Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*) (CE,F2)
- California Black Rail (*Lateralis jamaicensis coturniculus*) (F2, CT)
- California Black-tailed Gnatcatcher (*Poliophtila melanura californica*) (CSC,F2)
- Least Bell's Vireo (*Vireo belli pusillus*) (FE, CE)

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Open Space and Conservation

The following species are reported from the Santa Ana River in Orange County and may also be expected in the study area:

- Great Blue Heron (*Ardea herodias*) (SA)
- Least Bittern (*Ixobrychus exilis*) (CSC)
- Snowy Egret (*Egretta thula*) (SA)
- Black-crowned Night-heron (*Nycticorax nycticorax*) (SA)
- Wood Duck (*Aix sponsa*) (SA)
- Cooper's Hawk (*Accipiter cooperi*) (CSC)
- Sharp-shinned Hawk (*Accipiter striatus*) (CSC)
- Golden Eagle (*Aquila chrysaetos*) (CSC)
- Swainson's Hawk (*Buteo swainsoni*) (CT)
- Northern Harrier (*Circus syaneus*) (CSC)
- Black-shouldered Kite (*Elanus caerulea*) (CP)
- Prairie Falcon (*Falco peregrinus mexicanus*) (CSC)
- Peregrine Falcon (*Falco peregrinus anatum*) (CE, FE).
- Osprey (*Pandion haliaetus*) (CSC)
- Short-eared Owl (*Asio flammeus*) (CSC)
- Long-eared Owl (*Asio otus*) (CSC)
- Tricolored Blackbird (*Agelaius tricolor*) (F2)
- Cactus Wren (*Campylorhynchus brunneicapillus*) (locally uncommon)
- Yellow-breasted Chat (*Icteria virens*) (CSC)
- Bank Swallow (*Riparia riparia*) (CSC)

Other species that may be expected to inhabit the area based on distribution and habitat preferences:

- Fulvous Whistling-Dusk (*Dendrocygna bicolor*) (CSC, F2)
- Merlin (*Falco columbarius*) (CSC)
- Black swift (*Cypseloides niger*) (CSC)
- Willow flycatcher (*Empidonax traillii*) (CSC)
- Purple Marin (*Pronge subis*) (CSC)
- Yellow Warbler (*Dendroica petechia brewsteri*) (CSC)

MAMMALS

- Los Angeles Pocket Mouse (*Perognathus longimembris brevinasus*) (F2)
- Stephens' Kangaroo Rat (*Dipodomys stephensi*) (FE, CT)

Other species that may be expected based upon distribution and habitat preferences:

- California leaf-nosed Bat (*Macrotus californicus*) (CSC, F2)
- Spotted Bat (*Euderma maculatum*) (CSC)
- Pale Big-eared Bat (*Plecotus townsendi pallescens*) (CSC)
- California Mastiff Bat (*Eumops perotis californicus*) (CSC)
- Pocketed Free-tailed Bat (*Tadarida ferminosacca*) (CSC)
- American Badger (*Taxidea taxus*) (CSC)

Open Space and Conservation

**Status Codes:*

CE	California Endangered
CT	California Threatened
CP	Fully Protected in California
CSC CDFG	Species of Special Concern
SA CDFG	Special Animal
FE	Federally Endangered
F1	Federal Candidate Species Category 1
F2	Federal Candidate Species Category 2
S USFWS	Sensitive Bird Species, Region 1

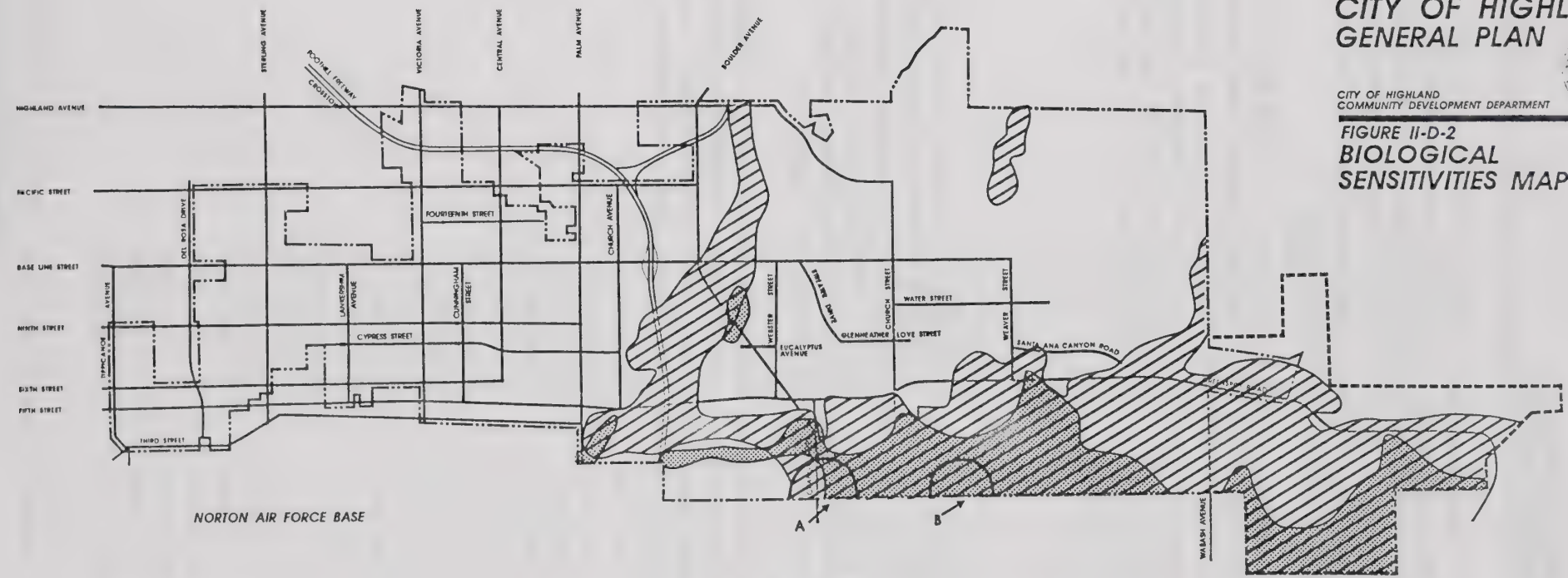
October 27, 1992

CITY OF HIGHLAND GENERAL PLAN

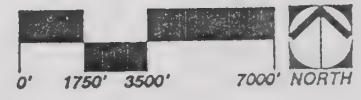


CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-D-2
BIOLOGICAL
SENSITIVITIES MAP



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  SPECIAL PLANTS
-  NATURAL COMMUNITIES
-  SPECIFIC OCCURENCE
SLENDER-HORNED SPINEFLOWER
(FERERAL & STATE ENDANGERED SPECIES LIST)



Open Space and Conservation

There are no federal or State threatened or endangered animal species with the incorporated portion of Highland. There are, however, two species of plants; the Santa Ana Woolly Star (*Eriastrum densifolium sanctorum*) and the Slender-Horned Spineflower (*Dodecahema Leptoceras*) that occur in the study area and are federally and State listed as endangered. These endangered plant species are found primarily in the bed of the Santa Ana River and in the wash areas at the southern portion of the study area (see Figure II-D-2, Biological Sensitivities Map).

In addition to the plant and animal species listed in Table II-D-2, the slopes adjacent to the San Bernardino National Forest support other mammals such as the California Ground Squirrel, Desert Cottontail, Coyote, and several species of mice. Numerous birds including the Black-Shouldered Kite, Burrowing Owl, and several hawk species can be observed throughout the general area. Although many of these animal species are not found in the immediate Highland area, some are listed by the California Department of Fish and Game as "Species of Special Concern," and could have the potential of becoming listed in the future.

Archeological Resources

The prehistory of the Highland area is not as well defined as the more recent events which led to the original founding of the community of Highland. It is known, however, that Native Americans have lived in the southern part of the State since around 10,000 B.C. The region encompassing the City of Highland was occupied by the Serrano, Cahuillia, and Gabrieleno people. In 1860, over 3,000 Native Americans lived in San Bernardino County. After 1862, disease and encroachments on native lands and culture led to the continued decline of the Native American population.

A recent records search of previous archeological surveys in the Highland area noted several sites north of the City (Figure II-D-3), and specific areas which are designated as "archaeologically sensitive." These areas are considered to have a high probability for discovery of archeological resources if disturbed by development. Within this area, several Historic and Prehistoric sites have been catalogued (Table II-D-3).

Open Space and Conservation

Table II-D-3
Inventory of Archaeological Resources Within
the City of Highland and Sphere of Influence

Prehistoric Archaeological Resources	
Sites	
CA-SBR-2313	campsite
Historic Archaeological Resources	
Sites	
CA-SBR-4220H	homesteading site
CA-SBR-5526H	agricultural site
CA-SBR-5978H	structural site
CA-SBR-5979H	water storage site
CA-SBR-5980H	water transportation site
CA-SBR-6006H	campsite
CA-SBR-6060H	refuse disposal site
CA-SBR-6061H	refuse disposal site
CA-SBR-6068H	refuse disposal site
CA-SBR-6070H	refuse disposal site
CA-SBR-6071H	structural site
CA-SBR-6073H	residential site
CA-SBR-6074H	refuse disposal site
CA-SBR-6075H	refuse disposal site
CA-SBR-6076H	refuse disposal site
CA-SBR-6079H	refuse disposal site
CA-SBR-6080H	refuse disposal site
CA-SBR-6083H	refuse disposal site
CA-SBR-6544H	water transportation site
CA-SBR-6548H	agricultural site
CA-SBR-6847H	railroading site
CA-SBR-6848H	water transportation site
CA-SBR-6849H	water transportation site
CA-SBR-6850H	water transportation site
CA-SBR-6851H	campsite
CA-SBR-6852H	water storage site
CA-SBR-6853H	refuse disposal site
CA-SBR-6854H	water transportation site
CA-SBR-7051H	water transportation site
CA-SBR-7165H	bridge
CA-SBR-7166H	residential site
PSBR-8H	road
PSBR-10H	ranching site
PSBR-11H	water transportation site
PSBR-12H	ranching site
PSBR-28H	water transportation site

Open Space and Conservation

Table II-D-3
Inventory of Archaeological Resources Within
the City of Highland and Sphere of Influence

PSBR-29H	water transportation site
PSBR-30H	water transportation site
PSBR-31H	water transportation site
PSBR-32H	water transportation site
PSBR-43H	road
PSBR-55H	water transportation site
P1062-5H	water transportation site
P1063-6H	commercial site
P1063-7H	commercial site
P1063-34H	commercial site
P1063-47H	commercial site
P1063-54H	water transportation site
P1063-57H	water transportation site
P1064-39H	refuse disposal site
P1074-97H	water transportation site
P1074-98H	water transportation site
P1074-99H	water transportation site
P1074-100H	water transportation site

Source: Archaeological Information Center, San Bernardino
County Museum, 1992.

Mineral Resources

The City of Highland, as identified in the California Department of Conservation Division of Mines and Geology Special Report 143 Mineral Land Classification of the Greater Los Angeles Area, overlies areas identified as Mineral Resource Zones (MRZ) by the State of California and the County of San Bernardino. There are three categories of Mineral Resource Zones: MRZ-1 identifies areas where adequate information indicates no significant aggregate deposits are present, MRZ-2 identifies areas where adequate information indicates that significant mineral deposits are present or likely to be present, and MRZ-3 identifies areas that contain aggregate mineral deposits whose significance cannot be evaluated from available data.

Approximately 54 percent of the acres designated as a Mineral Resource Zone are underlain by MRZ-2 rated mineral resources; the remaining acres are underlain by MRZ-3 rated resources, with less than 1 percent by MRZ-1 resources. As Figure II-D-4 and Table II-D-4 below indicate, much of the 10,231 acres of MRZ resources exist in areas which have already been developed, leaving 3,234 acres of potential aggregate resources that have not been developed.

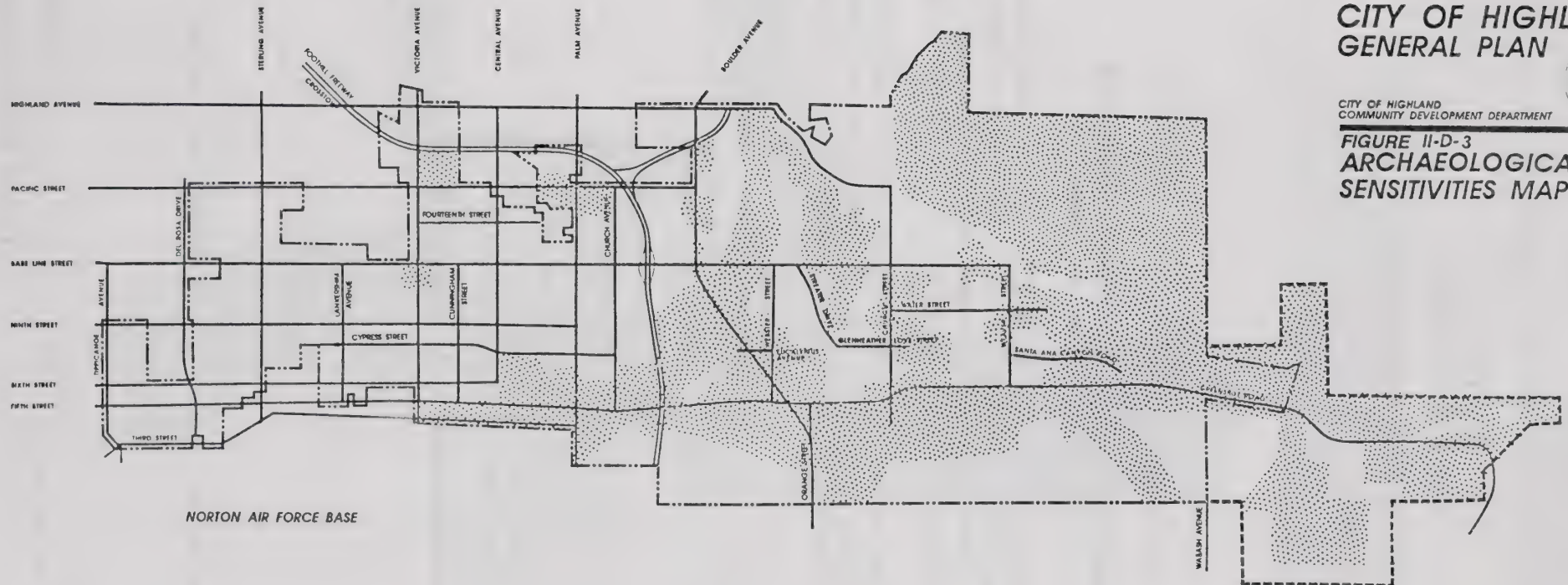
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CITY OF HIGHLAND GENERAL PLAN

CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



FIGURE II-D-3 ARCHAEOLOGICAL SENSITIVITIES MAP



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  AREAS OF SENSITIVITY FOR
ARCHAEOLOGICAL RESOURCES

SOURCE: COUNTY OF SAN BERNARDINO MUSEUM
ARCHAEOLOGICAL INFORMATION CENTER, JUNE 1992.

PLANNING NETWORK

II-D-15



Open Space and Conservation

Table II-D-4
Mineral Resource Zones

Category	Total Acres	Remaining Undeveloped Acres
MRZ-1	5	0
MRZ-2	5,465	1,781
MRZ-3	4,761	1,453
Total	10,231	3,234

Source: State of California and the County of San Bernardino, 1990.

East of Norton Air Force Base and Alabama Street, aggregate mining and processing operations have gradually expanded in the Santa Ana River floodplain. The C. L. Pharris Sand and Gravel operation is located at the easternmost extension of mining activities, east of Orange Street. Maximum production from this mineral extraction operations is estimated to be approximately 28 million tons.¹

The mine sites, Johnson Pit and Redlands Aggregate, are located on two 80 acre parcels east and northeast of the C. L. Pharris Sand and Gravel plant site. The northern portions of the mine sites are located within the City of Highland, with the remainder located within the City of Redlands.

Robertson's Readymix also has mining operations within the City of Highland. Robertson's mine site, approximately 111 acres, is located on Orange Street in the east basin of Plunge Creek. The existing aggregate production rate at this facility is 1.6 million to 1.8 million tons annually. The remaining life of this particular mine site is estimated to be about two years.²

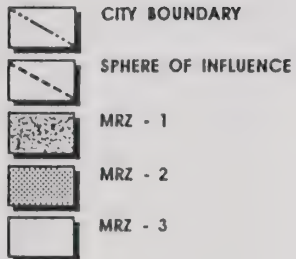
A description of the applicability of the Surface Mining and Reclamation act of 1975 (SMARA) can be found in the Concepts, Options, and Alternatives portion of the Open Space and Conservation Element.

¹ Old Webster Quarry Sand and Gravel Mining Operation and Reclamation Plan, Draft EIR, County of San Bernardino, October 1989.

² Ibid.

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**FIGURE 11-D-4
MINERAL RESOURCE
ZONES**



Open Space and Conservation

Parks and Recreation

There are no existing developed public park and recreation facilities within the City's boundaries. The present active recreational needs of the City are met by the few sports fields and playgrounds of the four elementary schools in the City, parks or schools in surrounding cities, vacant lots, and a few privately held fields that serve as informal ballfields and gathering places. There are also undeveloped and "natural" parks such as Auratia Park and the proposed mini-park near the Canyon Oaks Development.

The East Highlands Ranch project includes 113.6 acres of active recreational space and 940.3 acres of natural and visual open space for use by its residents. The 113.6 acres include passive/walking, hiking and biking trails through an open space network. When completed, these trails will connect with the foothills and the San Bernardino Mountains. This active parkland will ease some of the pressure on the City to provide recreation for the neighborhoods that are a part of the East Highlands Ranch Development. These facilities however, will be accessible only to residents of that development.

East Highlands Ranch has provided the following private parkland and facilities:

Table II-D-5
East Highlands Ranch Facilities

Developed Parkland	Provided 1991 (acres)
Natural and Visual	940.3
Active	113.6
Developed Facilities	Provided 1991
Tennis Courts	6
Volleyball Courts	2
Basketball Courts	0
25 meter Swimming Pool	1
Horseshoes	2

Source: City of Highland, 1991

Open Space and Conservation

The City has established an open space ratio of 2.5 acres per 1,000 residents which includes a ratio of 2.0 acres of developed park acreage per 1,000 residents and a ratio of 0.5 acres of undeveloped natural parkland per 1,000 residents. East Highlands Ranch has its own recreational facilities for the private use of its residents, therefore it has been accounted for separately from the City. See Table II-D-6 for overall parkland requirements.

Regional Parks and Recreation

The City is located within one hour of regional recreation areas such as the San Bernardino National Forest (to the north) which includes the summer and winter resort areas of Big Bear Lake and Lake Arrowhead, the San Gorgonio Wilderness, and San Jacinto Mountains. The San Bernardino National Forest provides for outdoor activities as diverse as swimming, boating, hiking, camping, downhill skiing, and cross country skiing. The recreation facilities of the University of Redlands, the University of California at Riverside, and Loma Linda University are located within a half-hour drive. Other surrounding regional recreation areas include: Lake Perris and Lake Elsinore (State recreation areas), Lake Skinner County Park, Yucaipa Park, Glen Helen Regional Park, and Mt. San Jacinto State Park.

Parkland Deficiency

Currently, the City is experiencing pressures related to increased needs and a lack of neighborhood and community recreation facilities. Based on Table II-D-6 and projected area population, the City of Highland currently shows a surplus of overall park space. But also noted in Table II-D-6, the buildout portion of the City is deficient in park and recreation facilities at the present and will experience further deficiencies as population growth increases unless park acreage is significantly expanded. The current distribution of park space and facilities is not advantageous to all residents of the City. For residents of the East Highlands area, there appears to be ample park space. However, with the exception of schools and a few private facilities, the areas west of the Foothill Freeway contain no facilities to serve current needs. Also, the Foothill Freeway acts as a physical barrier, potentially cutting off pedestrian and some vehicular access to school and park facilities west of the Freeway.

Open Space and Conservation

Immediate Needs Analysis

Immediate needs for neighborhood and community park sites have been derived from an estimated current population in Highland of 34,439, and a standard of 2.0 acres of developed parkland and .5 acres natural parkland required per 1,000 population. Based upon these criteria, total current acreage requirements have been calculated as follows:

- $34,349 / 1,000 = 34.35 \times 2.0 = 68.7$ total current acreage requirements for developed parkland.
- $34,349 / 1,000 = 34.35 \times .5 = 17.18$ total current acreage requirements for natural parkland.
- A total combined acreage of approximately 86 acres is required.

Scenic Highways

Within the City, there are no designated State Scenic Highways. Roadways of local interest include Boulder Avenue (State Highway 30), Greenspot Road, and Base Line (east of Boulder Avenue). Boulder Avenue has some regional significance since it connects with State Highway 330, which leads to the recreation areas of the San Bernardino National Forest. The roadways of local interest exhibit similar visual characteristics of rolling topography, open views of mountains, boulder-strewn wash areas, and agriculture. These roadways provide glimpses of rapidly disappearing historic land use patterns and natural site contexts.

Multi-Use Trails

The principle theme relevant to the initial development of Highland is that of agriculture, more specifically the role of the citrus industry. From the beginning of the Highland townsite, horses have played a major role in the development of the citrus industry and the original town. Horses transported oranges (before the railroad), dry goods, and building materials, and provided recreational horseback riding in the foothill and mountain areas.

Through the years, Highland's gentle sloping terrain has attracted equestrians to the City, and as a result, an extensive system of informal trails has developed in certain portions of the City. As increased development occurs within the City, Highland's informal trail system may be lost unless a master trails system is developed. A formal trail system in the City of Highland has significant potential for enhancing recreational, commercial, and scenic opportunities for adjoining properties and the community as a whole. Trails provide opportunities for hiking, biking, horseback riding, as well as a non-motorized circulation system that links residential areas to educational, commercial, recreational, and open space areas. With the rising cost of fuel and problems associated with the automobile, non-motorized trail circulation systems are becoming increasingly important for mobility and recreational purposes. Statistics have shown that many high-powered corporations select recreation as a price criteria when choosing a site for relocating their business.

The primary use of trails in the City of Highland has been for biking, hiking, and equestrian activities. In Highland, it can be estimated that several thousand horses plus numerous private stable and other equestrian facilities are within or adjacent to the city limits. Despite the potentially large usage, few improved community trails are available to hikers, bikers, and equestrians.

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Open Space and Conservation

Table II-D-6
Park Analysis
July, 1992

City of Highland Public Park Land Needs Analysis	Total Population	Park Needs @2.5 Acres/1,000 People (Acres)	Developed Park Needs @2.0 Acres/1,000 People (Acres)	Undeveloped Natural Park Needs @0.5 Acres/1,000 People (Acres)	Existing developed Parks (Acres)	Proposed Parks (Acres)	*Joint-Use Park/Schools (Acres)	Park Surplus/ (Deficit) (Acres)
1990 Population (w/o EHR)	31,783	79	63	16	0	33	19	(27)
East Highlands Ranch (EHR)	<u>2,656</u>	<u>7</u>	<u>6</u>	<u>1</u>	<u>73</u>	<u>0</u>	<u>3</u>	<u>69</u>
Total	34,439	86	69	17	73	33	22	42
General Plan Buildout Population (w/o EHR)	53,187	133	106	27	0	38	29	(66)
East Highlands Ranch	<u>8,390</u>	<u>21</u>	<u>17</u>	<u>4</u>	<u>114</u>	<u>0</u>	<u>7</u>	<u>100</u>
Total	61,577	154	123	31	114	38	36	34

Proposed Parks - 33 Acres

1. 10 Acre - Co-venture park with the City of San Bernardino.
2. 15 Acre - Norton Air Force Base, site corner of Central Avenue and Hibiscus Street.
3. 12 Acre - Community park located west of Aplin north of Greenspot Road.
4. 1 Acre - Canyon Oaks Park.

* Existing and Proposed School Facilities - 26 acres available for recreation (5 elementary schools, approximately 5 acres each and 1 proposed school, approximately 4 acres)

East Highlands Ranch - population at buildout 8,390

1. 114 Acres of active space (including recreation center, volleyball courts, softball/soccer/play fields, pool, and passive trail network)
2. 940 Acres of natural and visual open space (not usable for recreational purposes)

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Open Space and Conservation

Maintaining community trails in the City of Highland will continue to be an attractive part of the community only if the environment offers an easy access to the trails and the auxiliary facilities.

Residents of Highland have used a variety of formal and informal trails throughout the years: forest service trails, private land trails, street rights-of-way, etc. The majority of these trails are located in the vicinity of the master-planned community of East Highlands Ranch and the more rural portions of East Highland. The extent of use of any trail in the western portion of the City is limited because of urbanization and most trails use is restricted to flood control channels and other informal trails.

A formal trail system was initiated when the East Highlands Ranch began construction in the early 1980s. The trails within East Highlands Ranch are currently in rough, graded form, and are utilized by residents in the surrounding area. East Highlands Ranch has agreed to ultimately improve public trails within the development to the standards adopted by the City. All other trails in the development which are not controlled and maintained by the East Highlands Ranch Homeowners Association will eventually become the full responsibility of the City, and will be open to all.

An Equestrian Trails Committee was formed in the late 1980s to help establish the location of East Highlands Ranch trails. The committee efforts were intended to preserve access to the foothills and Santa Ana Wash for equestrians. As a result of their work, the Highland City Council adopted the Conceptual East Highlands Equestrian Map, in January of 1989 (Figure II-D-5).

Recognizing the need to establish a formal trails committee to consider not only equestrian needs, but also hikers, bikers and non-motorized bikes, the City established the Community Trails Committee in October of 1990. The Committee's purpose is to advise City Council on the development and maintenance of trails; review existing programs and standards; recommend priorities for new trail development for budget consideration and grant applications; identify potential new sources of funding for trails development; and make recommendations for improvement and maintenance of existing and future trail systems.

Issues

Agriculture

- The rapid urbanization of the study area has created a demand for conversion of agricultural uses to urban uses. The economic incentives to the farmer for such conversion are too great for the lands to remain agricultural.
- As agriculture gets displaced to hillside areas and smaller plots of prime land, the uses typically change to higher dollar value crops or transition to hillside residential development or other developmental uses.
- As agricultural lands transition to more urban land uses, the potential for the creation of inconsistent "edges" of development increases. It will be important for the City to incorporate appropriate land use transition and buffering techniques into new development.

Water Resources

- Water demand in the area will increase at or near a constant rate in the foreseeable future. Water conservation efforts will help reduce this increase.
- Water supplies are adequate for the foreseeable future, although variables such as economics (cost to water users), energy use, and environmental factors (drought, contamination, etc.) may have some affect.
- In the event of drought or other crisis affecting the State water project supply, there is enough water in the area to meet the projected demand for the future. However, additional facilities would be needed for groundwater pumping, distribution, and recharge throughout the area.
- The availability of treated wastewater for agricultural use could assist in maintaining some agricultural uses within the area as the cost of treated wastewater will be less than that of imported water supplies. However, it should not be assumed that by making treated water available to agricultural uses within the area, that these uses are then viable for the long-term. Although water costs may be reduced, the agricultural use of reclaimed water would not likely maximize the farmer's profitability.
- Other opportunities for the reuse of treated wastewater include uses for industrial purposes and landscape irrigation, if it can be economically delivered.

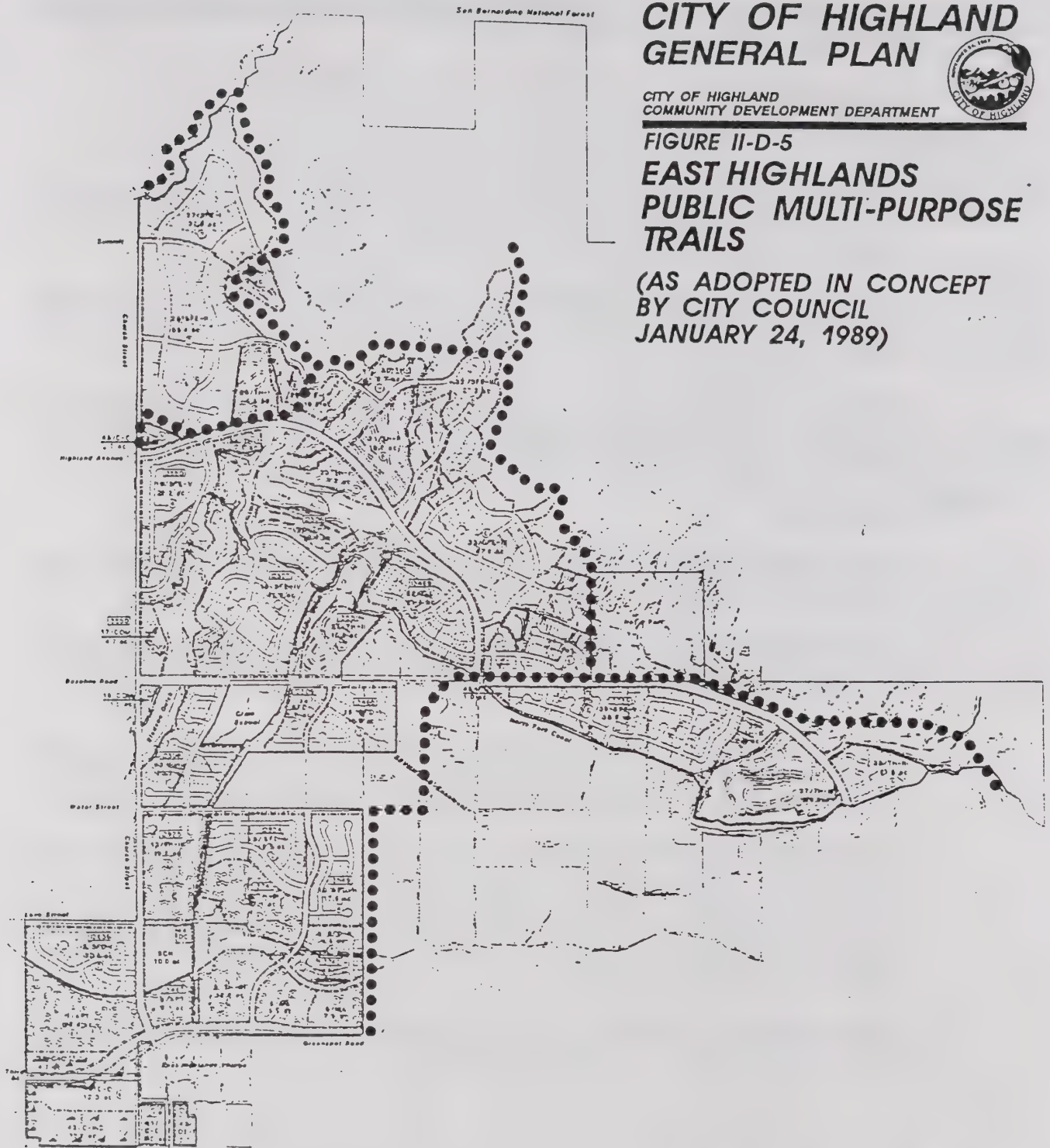
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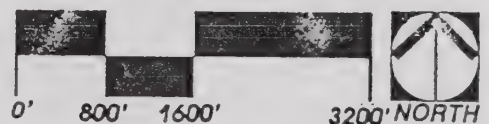
FIGURE II-D-5 EAST HIGHLANDS PUBLIC MULTI-PURPOSE TRAILS

(AS ADOPTED IN CONCEPT
BY CITY COUNCIL
JANUARY 24, 1989)



PUBLIC MULTI-PURPOSE TRAILS

SOURCE: CITY OF HIGHLAND, 1991.



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Open Space and Conservation

- Future development within the area could result in long-term changes in the quantity and/or quality of runoff and groundwater.
- By increasing the amount of impermeable surfaces, groundwater supplies may lose valuable recharge opportunities.

Biological Resources

- There is the potential for sensitive plant species to occur along the Santa Ana River bed and the wash area. These species consist of Santa Ana River Woolly Star (*Eriastrum Densifolium*), and Slender-Horned Spineflower. Future development must be sensitive to the protection of these species.
- The General Plan study area contains several distinct geographical features such as stream channels, rivers, alluvial plain, and mountain ranges which support diverse plant communities and animal habitat. Development within a majority of the study area will continue to replace these habitat areas with development, eventually eliminating them. Providing an accurate database of biologically sensitive areas will become more important as urban development encroaches on existing undisturbed areas.
- The limited riparian vegetation that exists near reservoirs, stream channels, and the river basin will be impacted as development occurs and flood control improvements are constructed, and man-made flood control structures replace natural drainage channels.

Archeological Resources

- A study of archeological surveys in the Highland area indicates areas which are "archaeologically sensitive." A consistent effort will need to be made to ensure that prehistoric artifacts are identified as development occurs.

Mineral Resources

- While most land uses have options to site development, mineral extraction is limited to sites where the minerals naturally occur. Because these areas can also support development in most cases, mineral resources are often ignored as a profitable commodity.
- Mineral resources within and adjacent to the study area have been classified as a significant resource by both the State Geologist and San Bernardino County. These resources should be protected and managed or they will be lost due to encroachment of incompatible land uses.
- Mining operations are generally incompatible with the uses that surround them and leave behind unsightly scars. Mining operations should be required to minimize aesthetic impacts to surrounding uses and provide reclamation of mining areas following their use.

Open Space and Conservation

- The process of mineral extraction can create a variety of potential impacts to the environment which can include land use incompatibility, air pollution emissions, truck traffic, noise, and harm to sensitive flora and fauna. Protection of this natural resource should be balanced with the need to protect the both the natural and man-made environments from the potential impacts from mineral extraction activities.
- According to the Surface Mining and Reclamation Act of 1975, local agencies must establish mineral resource polices in their general plans that:
 - recognize the mineral information provided by the classification process;
 - assist in the management of land uses that affect areas of statewide and regional significance; and
 - emphasize the conservation and development on the identified mineral deposits.
- According to the State Geologist, unless additional resources are permitted within the San Bernardino Production - Consumption Region, or alternative sources are utilized, total existing resources now owned or controlled by mining operations would be depleted in 41 years. If all 10 billion tons of available resources within the Resource Sectors proposed by the State were to be devoted to mining, over 900 years of aggregate would be available.

Parks and Recreation

- The City will need to be creative in developing partnerships with other public entities or with private interests in order to provide for parks and recreation facilities.
- The amount of park land serving the General Plan study area, compared to the standards of National Parks Association, is currently deficient in all park land categories except for the East Highlands Ranch area.
- The study area is also experiencing pressures related to increasing needs and a shortage of community recreation centers.
- The City recognizes the deficiency in park facilities, but due to the lack of funding available for these types of facilities, is unable to meet the immediate requirements as set forth in this document. The use of the recommended funding programs may provide resources for future parks and recreation needs.
- The construction of new park facilities has been predominately focused on the eastern portion of the study area within the East Highlands Ranch Planned Unit Development.
- Opportunities for new park development in the western portion of the study area are limited by existing development. Vacant parcels which could be used for park development do not always exist in an appropriate location to secure the City's recreation needs. One such site, however, does exist near Base Line and Church Avenues where vacant land has been created due to the construction of the Foothill Freeway.

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Scenic Highways

- Currently, there are no scenic highway designations in the City. Connections with surrounding scenic highways designations will need to be determined.

Multi-Use Trails

- Residents of Highland have used a variety of formal and informal trails throughout the years: forest service trails, private land trails, street rights-of-way, etc. Although these trails are now used on an informal basis, the City lacks a comprehensive trails plan.
- Trails which have been planned as part of the East Highlands Ranch provide an opportunity to link proposed trails in the northeastern portion of the study area. Because some of the trails in this area will remain private, public use of some rights-of-way may be limited.
- As recreation needs grow more demanding, agencies at the local, State and federal level are being pressured by budget cut-backs. These cut-backs have left cities with shortages of parks, neighborhood playgrounds, tennis courts, swimming facilities, and campgrounds. Recreational trails, when forced to compete for funds with these more traditional needs, often become a low priority for many agencies.
- Unlike typical park facilities, recreational trails continue for long distances. The linear nature of these trails and paths puts increased strain on implementation efforts because trails may continue through several different public and private property ownerships, making it sometimes difficult to obtain easements. Actual development of some facilities, such as paved and dedicated bicycle trails, can be very costly because of the need for surveillance over long distances. The City of Highland could implement a volunteer ranger program that uses volunteers from equestrian groups, bicycle clubs, and area residents, to provide the necessary level of enforcement, with minimal operation cost.
- The City has a responsibility and liability for events which occur on City-owned property. Where the City has obtained trail easements, the City has a responsibility and corresponding liability exposure if it does not properly protect the property and those who use it. The City, assuming responsibility for the trails, can include the trail system in its current liability insurance. According to California State statutes, anyone dedicating or providing an easement for any trail is absolved of all liabilities for any incident or accident occurring on said property. East Highlands Ranch has not yet dedicated any trails to the City of Highland for public use. Eventually, however, these East Highlands Ranch public trails will be dedicated to the City.
- The City of Highland Trails Plan should attempt to utilize floodplains, channels, seismic zones, etc., and already existing public utility rights-of-way, so that little, if any, additional expense for improvements is incurred. In many instances, hikers and horseback riders have already created pathways through much of the land unsuitable for development.
- Maintenance of the trail system must be the responsibility of the City, to assure public safety and reduce corresponding liability. The development of a trail system should be done in an orderly, staged process where the City can evaluate and estimate maintenance expenses for each trail extension.
- The implementation of a multi-use trails system may help the City achieve other transportation planning goals (such as congestion management and air quality) by providing an alternative method by which residents will be able to travel in and through the City.

Open Space and Conservation

Concepts, Options, and Alternatives

Agricultural Lands

As this transition occurs from agricultural lands to more urban uses, the following land use compatibility concerns will need to be addressed:

- Will the proposal create a land use pattern which is inconsistent with surrounding development?
- Does the proposal encourage a logical extension of infrastructure from adjacent parcels capable of serving future planned land uses without traversing large undeveloped areas?
- Is the proposal part of a larger physical area which, if not planned as an overall unit, will lead to a disjointed area development pattern?

Although other innovative solutions to the above concerns are encouraged, master planning a significant portion of the agricultural areas within the study area for future development would seem to be the most beneficial way to achieve a comprehensive land use plan. Such an effort should be combined with other area planning programs, such as those proposed for the East Highlands Ranch neighborhoods.

Where portions of the General Plan study area share a common boundary with existing agricultural properties, concepts for transitions and buffers have been established in the Community Design Appendix for use as a guide for new development.

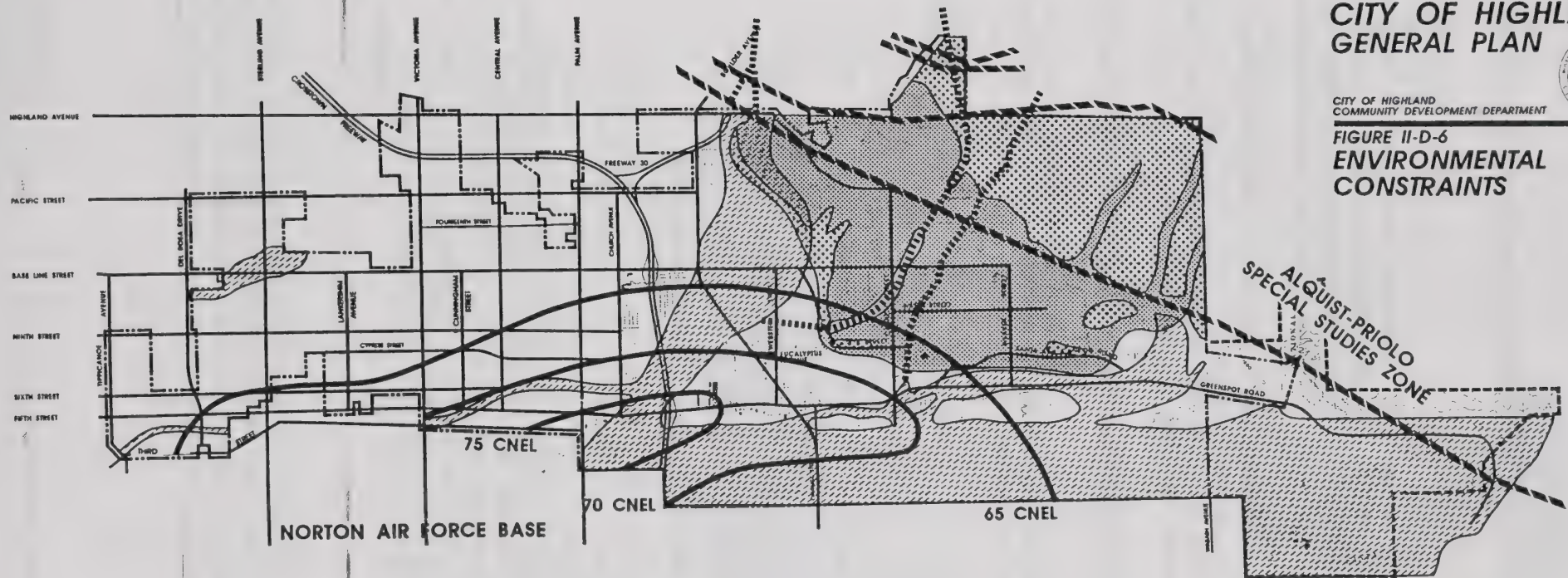
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CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-D-6
ENVIRONMENTAL
CONSTRAINTS



- CITY BOUNDARY
- SPHERE OF INFLUENCE
- NORTON AFB NOISE CONTOURS
- FLOOD ZONE A (100 YEAR FLOOD)
- DRAINAGE COURSES
- 0% - 5% SLOPE

- 5% - 15% SLOPE
- 15% SLOPE AND OVER
- APPROXIMATE FAULT LOCATION

PLANNING NETWORK

II-D-29



Open Space and Conservation

Water Resources

The City of Highland recognizes the importance of managing water resources within the Valley. Decreasing future dependence on imported water through the use of water conservation measures increases the chances of recovery in the event of drought or other emergency. Methods by which the City will ensure the protection of natural watershed areas as the study area develops include:

- The promotion of domestic and business water conservation programs and alternatives.
- Encouraging water purveyors to require that reclaimed wastewater, stored rainwater, or household gray water be used for landscape irrigation.
- Encouraging a wide variety of landscape, irrigation, and maintenance techniques which promote wise water use (see Table II-D-7).
- Promoting interagency programs designed to encourage water conservation and reuse through volunteer efforts and public education programs.
- Implementing the specific water conservation and reclamation techniques described in the Community Design Appendix.

Additional discussion regarding the development and/or enhancement of water resources and their related supply systems is contained in the Water Facilities Section of the Public Services and Facilities Element.

Biological Resources

Today, there are still large expanses of open land, natural hillsides, natural stream channels, wildlife, and panoramic views of the mountains which surround the City of Highland. As the built environment grows outward, physical encroachment of urban development has the potential to erode the natural balance of existing biological habitat. The following concepts reflect the City's commitment to the stewardship of the Valley's biological resources.

Natural Resource Inventory

The protection of the natural environment starts with an inventory of the existing conditions within identified natural areas within the study area. As part of the General Plan Existing Setting sensitive, threatened, and endangered species are catalogued to provide a definition of biologically sensitive areas. This information will be used as the database from which future policies can be derived.

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Open Space and Conservation

Conservation Strategies

Alternative methods used in the conservation of sensitive species and their habitats range from setting up large habitat conservation plans to smaller, local efforts designed to protect the natural environment from local urban influences. At a minimum, conservation programs should include the following:

- an inventory and analysis of existing conditions;
- a variety of conservation alternative strategies;
- the establishment of funding, mitigation and monitoring programs; and
- a public participation program.

Conservation Options and Suggestions

The following section describes biological conservation suggestions which, if used, will promote the City's goal of natural resource protection.

- **Development Buffer Zones:** During the construction phase, areas which might be impacted by construction activities such as removal of topsoil, disruption of stream channels and drainage areas, or disruption or degradation of habitat areas, can be protected by separating construction activities from sensitive resources through the use of buffers and setbacks and protective fencing.
- **Existing Ecosystem Preservation:** Established trees and plant material can suffer from construction practices that change the drainage patterns and soil chemistry. A construction practice as simple as washing out a concrete truck can be disastrous, since the lime-filled water can easily kill nearby trees, damage riparian foraging areas, and damage the soil for future plantings. One method of preserving vegetation in and around a construction project is to identify a "life support envelope" around existing significant trees and plants which can be protected from hazardous construction practices.
- More detailed plans which identify the location of significant trees and plant material on construction plans can also help translate preservation concepts to those persons working on the job site.

Open Space and Conservation

Archeological Resources

The City of Highland recognizes the importance of local archaeological resources. Since the community's archeological resources are widely spread throughout the northern portion of the study area, the concept of protecting such sites on a site-by-site basis using the development review process is necessary. Such review will need to be coordinated with the County Archaeological Information Center located at the San Bernardino Museum, in areas which have been identified as archaeologically sensitive. Upon determination that an individual project is located within the sensitive area (Figure II-D-3), the individual applicant would look to the Archeological Information Center to research the area for potential archaeological resources which may affect the development. The scope of this effort would include the following:

Archival Review

- Conduct a records check at the San Bernardino County Archaeological Information Center.
- Conduct an archival search for information on historic resources. Pertinent records might include original General Land Office plats and surveyors' fieldnotes on file at the County of San Bernardino Office of Surveyor, and property ownership records on file with the County of San Bernardino Assessor and the Bureau of Land Management, Riverside.

Field Reconnaissance/Survey and Resource Evaluation

- Conduct a field survey for prehistoric and historic cultural resources older than 45 years in age. If resources are encountered, evaluate them for their significance, their depth, lateral extent and integrity of cultural remains, as appropriate (see below). For all resources identified, complete appropriate California Office of Historic Preservation site, structure and isolate record forms. Prior to the completion of the survey report, submit two copies of completed records to the San Bernardino County Archaeological Information Center for assignment of appropriate State and County record numbers. These numbers should appear in the final report.
- Previously reported and/or new resources must be evaluated for significance, following appropriate State and federal regulations and guidelines.
- For potentially significant archaeological resources, probe, core or auger deposits to document their depth, lateral extent and integrity. For potentially significant historic structures, evaluate the general integrity of architectural and landscape elements.

Cultural Resource Report

- Complete a final report of the investigations and evaluations performed (following guidelines for Archaeological Resource Management Reports prepared by the California Office of Historic Preservation, Preservation Planning Bulletin 4a December 1989). One copy of this report is to be filed with the San Bernardino County Archaeological Information Center.

If resources are identified, the individual applicant would work with the City of Highland, the Archaeological Information Center, and a qualified archaeologist to determine the proper mitigation for the site in question.

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Mineral Resources

Surface Mining and Reclamation Act

The City of Highland recognizes the importance of preserving mineral resource development opportunities within the region. The following discussion is intended to establish a general understanding of the process used to support the mineral resource policies contained in the Highland General Plan.

In 1975, the California State Legislature enacted the Surface Mining and Reclamation Act (SMARA). Among other requirements, the Act requires the State Geologist to classify mineral areas in the State and requires the State Mining and Geology Board to designate mineral deposits which are of regional or Statewide significance. The classification process can be briefly summarized as follows:

- **Determination of Production-Consumption (P-C) Region Boundaries.** In this step, active aggregate operations are identified (Production), and the market area they serve is determined (Consumption). This area is then modified to include only areas which are urbanized or urbanizing as determined by the State Office of Planning and Research. Virtually the entire Highland General Plan study area is within the San Bernardino P-C Region, which covers an area from Fontana on the west to Cabazon on the east, and from Devore on the north to Lake Elsinore and Hemet on the south.
- **Establishment of Mineral Resource Zones.** As noted in the Existing Setting Section, "Mineral Resource Zones" (MRZs) are classified by the Division of Mines and Geology on the basis of an aggregate appraisal which includes an analysis of geologic reports and maps; field investigations; and examination on active sand and gravel mining operations; analysis of drill-hole data; interpretation of aerial photography; and evaluation of data supplied by private mining operations. The four classifications previously defined include MRZ-1, MRZ-2, MRZ-3 and, MRZ-4.

In accordance with the Surface Mining and Reclamation Act, the California Division of Mines and Geology has classified lands within the Highland General Plan study area as to the presence or absence of significant sand and gravel resources. Of a total of 10,321 acres of land which has been designated as significant, only 3,234 acres of land is in undeveloped portions of the study area. A majority of this area lies within the Santa Ana River Wash in the southeast and eastern portion of the Highland General Plan study area (see Figure II-D-4).

- **Determination of Resource Sectors.** Only those portions of land classified as within an MRZ that have land uses considered by the State Geologist to be compatible with mining are considered to be available as future aggregate resources for the P-C Region. Following intensive field checking, the State Geologist identifies individual Resource Sectors. Figure II-D-4 indicates identified Resource Sectors within the Highland General Plan study area.

Open Space and Conservation

- **Calculation of Resource Volumes Within Sectors.** In this step, a detailed analysis of site-specific conditions is utilized to calculate the total volume of aggregates within each of the Resource Sectors. Examinations conducted by the State Geologist indicate the thickness of suitable material within the Santa Ana River Wash area to be as great as 385 feet. Based on current operational data from existing sand and gravel operations within the Sector F of the San Bernardino P-C Region, the State Geologist has concluded that over 4.6 billion tons of resource exists. Within the entire San Bernardino P-C Region there are an estimated 10 billion tons of available aggregate resources, only 430 million tons of which are within areas for which mining permits currently exist.
- **Forecasting.** In this next step, anticipated aggregate demand in the P-C Region for the next 50 years is estimated. Results of this analysis are then compared to the total volume of aggregate reserves identified within the P-C region.

As discussed in the California Division of Mines and Geology Special Report 143, (1979), aggregates (including sand, gravel, and crushed rock) "provide bulk and strength to Portland cement concrete, asphaltic concrete, and plaster or stucco." Aggregates are also used in the construction of road base, subbase, and fill. Approximately 80 to 100 percent of the volume of the above uses consists of aggregates, an indication of the importance of these resources to the construction industry.

As part of the Surface Mining and Reclamation Act of 1975, the State Mining and Geology Board was required to prepare and adopt the "Guidelines For Mineral Resource Management" in 1979. Included in this document are the following goals, policies, and suggested compatibility standards for development, which make up the guidelines.

Land Use Compatibility Categories

The following land-use categories are provided as a guide to local government in establishing compatible land uses on or adjacent to mineral lands classified as MRZ-2 or designated as areas of regional or Statewide significance:

- **Incompatible** Land uses inherently incompatible with mining and/or which require a high public or private investment in structures, land improvements and landscaping, and which would prevent mining because of the higher economic value of the land and its improvements.

Examples of such uses include:

High density residential
Low density residential with high unit value
Public facilities
Intensive industrial
Commercial

- **Compatible** Land uses inherently compatible with mining and/or which require a low public or private investment in structures, land improvements and landscaping, and which would allow mining because of the low economic value of the land and its improvements.

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Examples of such uses include:

Very low density residential (For example: 1 unit per 10 acres)
Extensive industrial
Recreation (public/commercial)
Agricultural
Silvicultural
Grazing
Open space

- Interim Land uses which require structures, land improvements and landscaping of a limited useful life and from an economic and political standpoint can be converted to mining at the end of that limited life. The period of interim use should be compatible with the orderly and timely production of mineral resources and the useful life of the improvements.
- Buffer Land uses which provide sufficient distance and/or barriers between mining and incompatible land uses, to mitigate noise, dust vibration and visual impacts of mining, and to protect public safety.

State Mining and Geology Board Guidelines for Mineral Resource Management

Introduction In 1971, the State Legislature amended the Government Code to require that local government include a conservation element in its general plan. This element covers the conservation, development, and utilization of natural resources, including mineral resources.

The Surface Mining and Reclamation Act of 1975 contains specific provisions for the classification of mineral lands within the State by the State Geologist and the designation by the Mining and Geology Board of areas classified by the State Geologist as MRZ-2, to be of regional or of Statewide significance. These classified lands and designated areas ultimately will have to be recognized by local government in its general plan.

The mineral resource information developed under the classification-designation process gives local government an opportunity to update the conservation element of its general plan to determine policy and implement programs for the conservation and development of these resources.

The purpose of these guidelines is to suggest general goals and policies for use by local government to protect and assure the wise use of identified mineral resources. Specific policies and implementing programs will have to be developed by local government within the context of their general plan and mineral resource management situations within their jurisdiction.

Mineral Resource Management Goals and Policies

Mineral Resource Management Goals Management of identified mineral resources by local government should be directed toward the following goals:

- Mineral lands classified MRZ-2 or designated as areas of preclusive and incompatible land uses so that the mineral resources with these lands and areas are available when needed.

Open Space and Conservation

- Surface mining within these classified lands and designated areas should be controlled to assure that:
 - Adverse environmental effects are prevented or minimized and that mined lands are reclaimed to a usable condition which is readily adaptable for alternative land uses.
 - The production and conservation of minerals are encouraged, while giving consideration to recreation, watershed, wildlife, range and forage, aesthetic enjoyment, and other environmental factors.
 - Residual hazards to the public health and safety are eliminated.

Mineral Resource Management Policies Mineral resource management policies developed by local government pursuant to the Surface Mining and Reclamation Act and Board guidelines should:

- Establish land-use categories which will allow for timely mineral extraction to meet projected demand in areas classified as MRZ-2 or designated to be of national or Statewide significance, and establish regulations for these land use categories which will protect them from land uses which would preclude mineral extraction.
- Develop and implement regulations to insure that adequate supplies of mineral commodities are developed under a diversity of ownership to protect the consumer against the effects of restricted competition.
- Develop and implement regulations which will buffer land use categories permitting mineral extraction from uses incompatible with mining.
- Develop and implement regulations to insure that after mitigative measures are taken, a proposed mining operation will not create any significant nuisances, hazards, or adverse environmental impacts.
- Develop and implement regulations to insure that all mining operations provide for adequate reclamation of mined lands before issuing mining permits.

Parks and Recreation

Central to the provision of park and recreation facilities in the City of Highland is the establishment of a comprehensive park, recreation, and natural open space policy program and development strategy. As part of the General Plan, the initial step in the process has already been undertaken (see Figure II-D-7).

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Park and Recreation Policy Program and Development Strategy

Comprehensive Park, Recreation, and Open Space Program

Program Concept Development of a long-term park, recreation, and natural open space development program which matches the needs of the community with the existing, ongoing, and future park, recreation, and natural open space opportunities, and integrates both implementation and funding strategies.

Program Objectives Identification of Needs: As part of the General Plan, this step has partially been accomplished using the General Plan Land Use Map as a long-term guide in the establishment of general park, recreation, and natural open-space areas. More specific needs studies and analysis will need to be attempted in order to establish local neighborhood needs and desires, local site availability, and how much the citizens will be willing to pay for new facilities.

Park Development Standards The General Plan also sets general guidelines for park development. In the building of a long-term strategy, however, standards must be specific enough to be used by both developers and the City in analyzing the future cost of new facilities and in their ultimate construction (see Table II-D-8 and Figure II-D-7).

Funding Once the actual costs of park development are established, funding programs can be investigated and implemented. Using information gathered during the Identification of Needs stage of the program, funding mechanisms which will be palatable to the residents in the community can be implemented (see the Financing Public Facilities Section of the Public Services and Facilities Element for additional discussion of this topic).

In addition to the direct financing of park facilities, it will be important to take advantage of less traditional methods of funding. Using incentives such as Transfers of Density, Density Bonuses, and Land Swaps may prove effective in the acquisition of vacant land. Allowing developers to construct parks in lieu of park fees on large projects may also be a viable option. And finally, the City will have to stay well aware of opportunities to take advantage of such as residual parcels from freeway construction, underutilized school district properties, and available flood control improvements, where appropriate, throughout the City.

Park Development Guidelines

The National Park Association has established recommended standards to define the minimum sizes for various types of parks. Those standards were compared to those of local Southern California agencies to represent the typical park for the area.

Open Space and Conservation

Mini Parks

Specialized facilities that serve a concentrated or limited population or specific group such as tots or senior citizens. These areas are quite often a substitute for backyards.

Minimum size:	1.0 acre or less
Acres/1,000 people:	0.5 acres
Service radius:	0.25 miles or less

Typical features of the mini parks may include, but are not limited to:

- Pre-school play area.
- Apparatus for older children, possibly including "themed" play equipment.
- Park seating for leisure and observation.

Neighborhood Parks

Neighborhood parks characteristically serve the recreation needs of a small segment of the population, usually within walking distance of the park. Often, such parks are located adjacent to an elementary school with which they may share playing fields.

The design of neighborhood parks should add to the quality of life of all residents by enhancing the environment, providing open space within walking distance, and supplying opportunities for individual and/or organized recreation.

Minimum size:	5-20	acres
Acres/1,000 people:	2.0	acres
Service Radius:	0.25-0.5	miles

Typical features of the neighborhood park may include, but are not limited to:

- Pre-school play area.
- Apparatus for older children, possibly including "themed" play equipment.
- Picnic facilities and park seating for leisure and observation.
- Buildings for restrooms and equipment storage.
- Open areas for informal play and passive enjoyment.
- Special facilities for groups and/or individuals with special needs.
- Horseshoes, shuffleboard, and/or volleyball courts.

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Open Space and Conservation

Table II-D-7
Steps in the Development of a Parks Master Plan

	General Plan	Future Park Master Plan and Development Program
Needs Identification	The general needs are included.	Specific needs and desires of each neighborhood will be established. Willingness for community financial participation determined.
Park Development and Locational Standards	General Park Standards have been included. Service and target areas have been established.	Construction standards will be developed to support fee structures. Assessment and establishment of detailed service areas.
Financing Methods	Optional Financing Methods are discussed and outlined.	All financing methods explored and matched as strategies to existing and proposed sites.
Implementation	Policy direction is included.	Effort by City staff and local community will be the key to the program success.

Source: Planning Network, 1992.

Community Parks

Community parks are leisure facilities specifically designed to serve the broader recreational needs of several neighborhoods. The nature of this type of facility encourages and attracts family units on a day-to-day basis as well as major events. The major recreation buildings and athletic facilities are generally designed for both day and night-lighted use.

Minimum size:	20-100	acres
Acres/1,000 people:	2.5	acres
Service radius:	.5-3	miles

Facilities appropriate to community parks may include:

- Fields for softball, baseball, football, soccer and other field sports.
- Courts for tennis, basketball, volleyball, handball, and other court games.
- Night-lighted facilities are essential to those citizens whose schedules do not permit them sufficient access to recreational facilities during daylight hours.
- Recreation buildings, including gymnasiums, with adequate provision for craft classes, dramatics and social activities.
- Hard-surface, multiple-use areas for tetherball, shuffleboard and other similar activities.

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- Play apparatus for pre-school age children, and other children.
- Senior citizen activities, such as horseshoes, lawn bowling and croquet.
- Large aquatic facilities for instruction and competition.
- Day camp play areas with sheltered or indoor facilities.
- Special facilities for the handicapped.
- Maintenance yards and facilities.

Table II-D-8
Recreation Facilities and Standards

Park Type	Primary Function	Space Standard	Service Area Radius	Tot Lot	Picnic Area	Passive Area	Restrooms	Basketball	Volleyball	Tennis	Baseball	Soccer	Community Center	Nature	Swimming
Mini	Passive	Up to 1 AC	1/4 mi.	•	•	•									
Neighborhood	Passive/Active	5-20 AC	1/4 to 1/2 mi.	•	•	•	■	■	■	■	◆	◆			
Community	Active	20-100 AC	1/2 to 3 mi.	•	•	•	•	•	■	■	■	■	◆	◆	◆

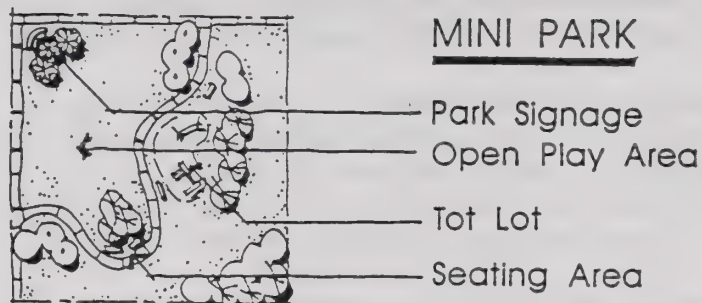
- Facility Should be Included in All Parks
- Facility May be Included in Park
- ◆ Facility Will be Limited to a Few Parks

CITY OF HIGHLAND GENERAL PLAN

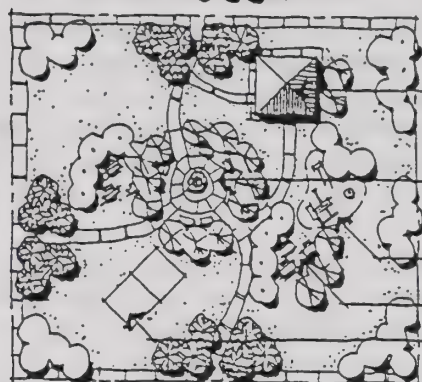
CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



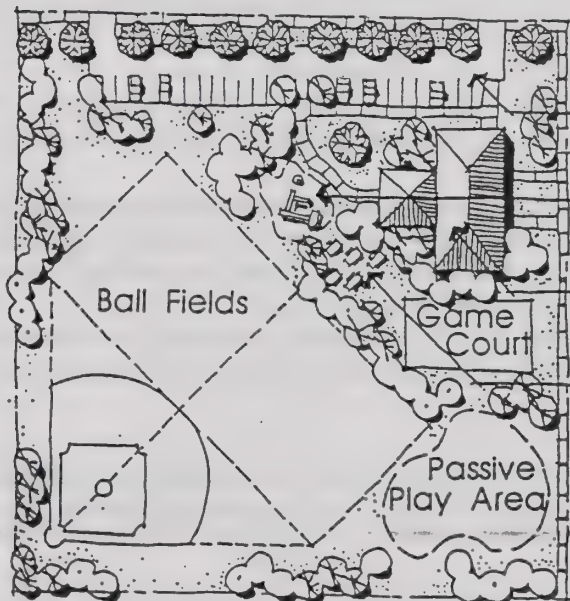
FIGURE II-D-7 PROPOSED PARK GUIDELINES



MINI PARK



NEIGHBORHOOD PARK



COMMUNITY PARK

SOURCE: PLANNING NETWORK, 1991.

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Open Space and Conservation

Special Use/Resource Facilities

Special facilities often result from special resources or opportunities and are of recreational or ecological value. Typical facilities include natural areas, cultural landmarks, ecological preserves, flood-plain lands, historic sites, and regional recreational facilities.

Minimum size:	Dependent on character of facility
Acres/1,000 people:	N/A
Service radius:	City-wide

Immediate Needs

Target Areas

Establishment of the boundaries for the neighborhood parkland immediate needs target areas, as shown in Figure II-D-8, takes into consideration the distribution and densities of the existing population within the City, the 1/2-mile service radius as stipulated by NRPA, the location, size, and distribution of existing/proposed park facilities and schools, and the current shortage of neighborhood park acreage within the City. The NRPA suggested size limitations for neighborhood facilities ranging from 5 to 15 acres, as well as the area constraints within the target areas, were also considered.

- *Target Area A:* This area is located in the central portion of the built-out area of the City. It comprises low density and medium density residential uses as well as commercial uses.
- *Target Area B:* This area is located east of the proposed 30 Freeway and comprises low density residential as well as commercial uses.
- *Target Area C:* This area is located east of the wash area and west of East Highlands Ranch. It comprises AG/EQ and low density residential uses as well as planned commercial uses.

In addition, the establishment of area boundaries was based upon the assumption that specific plan and planned development areas within the City adequately provide for the park and recreational needs of their residents at the neighborhood level, and the assumption that regional recreational facilities within close proximity to City boundaries provide no recreational benefit to City residents at the neighborhood level. It can be stated that a shortage could be somewhat diminished by utilization of recreational spaces and facilities available at school sites by the residents within the 1/2 mile radius specified for neighborhood facilities.

However, as school facilities may provide areas for active recreation (i.e., playgrounds, ballfields), passive recreation opportunities (i.e., picnic areas, nature trails, unstructured open space) are not provided.

With review of the target areas not currently being serviced by a neighborhood park facility and assuming joint use of school facilities located within the City or on the perimeter, four sites, each encompassing one to five acres, could theoretically accommodate the existing target areas without significant overlaps in those service radii.

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Open Space and Conservation

Therefore, although it is theoretically possible to meet the current neighborhood park needs of the existing population in conformance with the stated standards, from a practical point of view, given the perfect site distribution that would be required to avoid overlap in service radii, and given the logistics and inherent difficulties associated with any land acquisition undertaking in a largely built-out area, there will undoubtedly be a less than optimum distribution of facilities within the target areas.

Given the above, it is recommended that the City, at least in the short-term, concentrate its neighborhood park site acquisition efforts exclusively within the target areas as delineated in Figure II-D-8, in favor of the acquisition of sites for future need within the outlying areas of the City. Such a priority will serve to diminish, to the greatest degree possible, the current shortage of neighborhood facilities within the most densely populated areas.

It is further recommended, given the unlikelihood that optimum neighborhood park site acreages can ever be provided within the target areas, that the City focus its acquisition efforts on meeting the park needs using the service radius method irrespective of ultimate compliance with NRPA acreage requirements. In addition, the City should vigorously pursue the implementation of policies included in this program, as they relate to the joint ownership, financing, maintenance, and use of school recreational facilities and other public agency lands available for recreational use within the City and the identified target areas.

The phasing for joint-use school/park facilities is recommended to follow the below implementation schedule:

- Within two years of the adoption of the General Plan, establish a joint-use agreement with the San Bernardino School District and the Redlands School District for the six targeted schools. In cooperation with the school districts, develop a master plan of facilities which indicates the potential development of new park facilities such as backstops, lighting, play equipment, etc.
- Within five years, complete improvements to three of the targeted school facilities.
- Within seven years, complete improvements to the remaining three targeted school facilities.

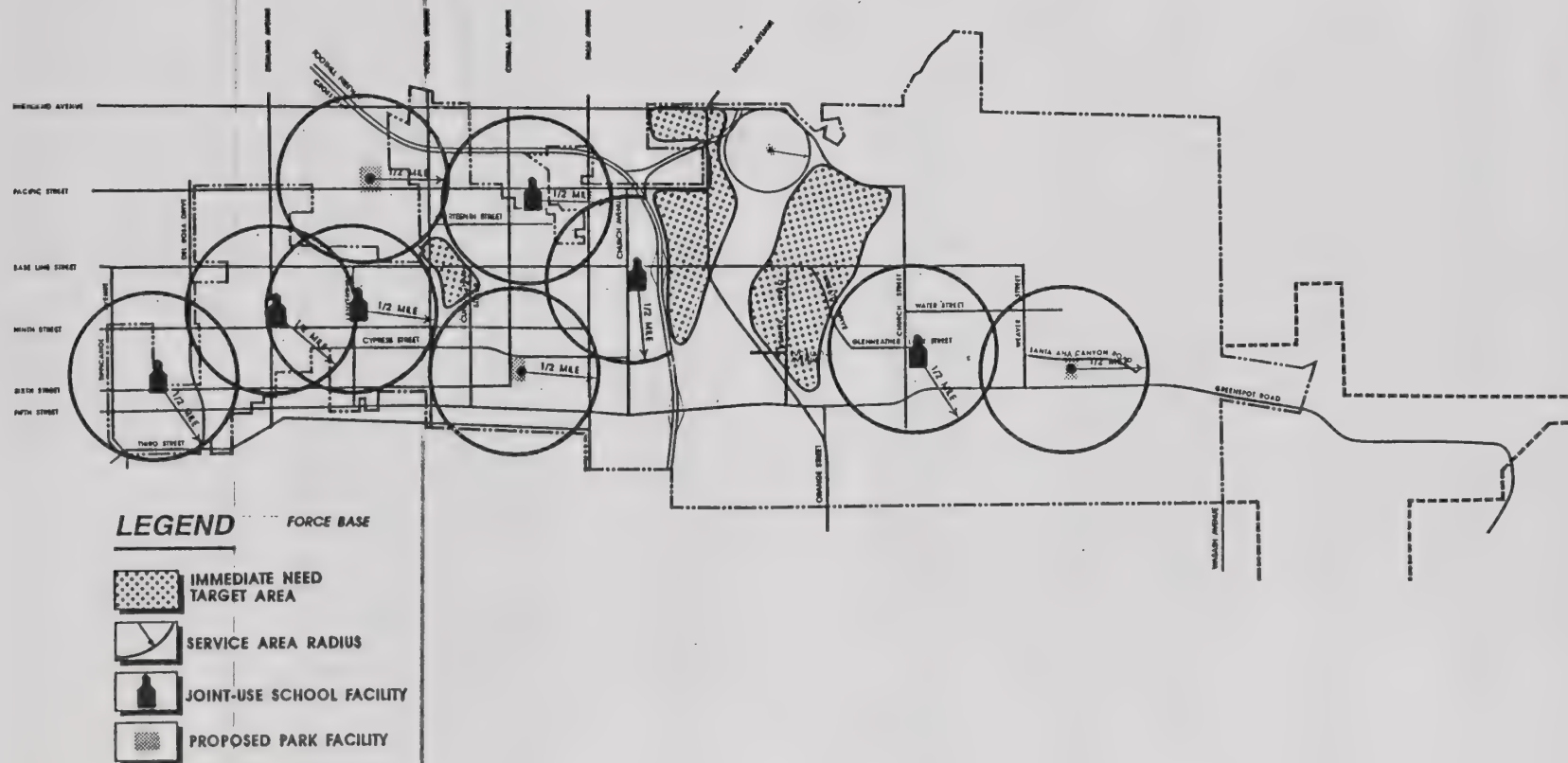
With the improvements to these facilities, the City could concentrate further efforts on the acquisition and improvement of other parkland and open space within the City.

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-D-8
**CURRENT PARK
NEEDS ANALYSIS**



PLANNING NETWORK

II-D-44



Open Space and Conservation

Target Area Options

With the establishment of the immediate need target areas, certain options could be available for the acquisition of park space. Potential options for each target area are as follows:

- *Target Area A:* With the development of large parcels in this area, the City may wish to pursue the following or other available options:
 - Density bonus as a tradeoff for dedicated parkland.
 - Parking Requirement Reductions as a way of offsetting dedication of parkland.
 - Parkland dedication in lieu of fees.
- *Target Area B:* With the development of the 30 Freeway, small pocket parcels may be available for development of mini-parks, or construction of a neighborhood park in or near the wash area may be possible. An immediate opportunity for such a purpose now exists at the corner of Base Line and Church Avenues, just west of the Foothill Freeway, where a residual parcel has been designated near an existing elementary school. The City should investigate the park development potential of this parcel along with the incorporation of City/School District joint use, recreation concepts.
- *Target Area C:* The City may wish to pursue development of a community level park in or adjacent to the wash area to serve neighborhood facility and City needs. Such an undertaking would necessitate a coordinated effort with regional flood control plans.

Future Needs Assessment

Future needs throughout the City of Highland for developed and natural parkland were determined on a basis of population projections at buildout, utilizing the anticipated number of residential dwellings of all types as permitted within each land use category, and census data relating to the average number of occupants per household.

In the calculation of total acreage requirements at buildout of the City, the same criteria applied in the calculation of immediate acreage needs, 2.0 acres per 1000 for developed parkland and .5 acres per 1000 for natural parkland. Existing parkland acreages within the City were subtracted for a total adjusted future need of 28 acres utilizing joint-use school facilities, or 64 acres without schools.

These future needs could be accommodated by future development, although the distribution of these facilities may not be adequate to meet the needs of the western portion of the City. New development should be required to meet the City Standard of 2.5 acres per 1000 population, while acquisition of mini-park and neighborhood park space in the developed portions of the City should strive to meet the needs of the residents.

Open Space and Conservation

Along with acquisition of neighborhood parkland for future needs, the City should pursue the development of a larger community recreation facility. Wash areas, utility right-of-ways, or other publicly owned property may be considered for locating this type of park facility.

A City-wide Parks and Recreation Master Plan should also be prepared to evaluate the specific needs of the residents of Highland. Within this plan, needs for specialized or specific facilities should be evaluated and established to best meet the future needs of the City. This effort could also include the master plan of joint-use facilities mentioned previously.

In conclusion, it should be stated that to emphasize fulfillment of the City's immediate parkland needs, is in no way meant to understate the importance of implementing an ongoing, long-term program of park site acquisition and improvement toward the provision of adequate open space and recreational facilities in pace with future growth for the benefit of future Highland residents within all areas of the community.

It should also be noted that under the City's current fiscal situation, it is not foreseeable that the City would have resources available to fund proposed park development and maintenance from the City's General Fund without the aid of alternative funding sources.

Acquisition and Funding

An important aspect of providing parks and recreational facilities involves identifying ways and means to implement the recommendations that are designed to help achieve the City's goals and objectives. In order for the City to embark on a long-term program of land acquisition and development of new recreational facilities, methods of funding will be required.

There are four categories of funding sources available for park and recreation development in the City: local, state, federal, and private. Several types of funding sources may be applicable to park and recreation development within the City of Highland.

Local

Local funding sources can be in the form of bonds, park and recreation fees and dedications, direct purchase of land, and user fees. The following is a summary of potential local funding sources:

- *Park and Recreation Fees, Dedications, and Ordinances:* This funding source would necessitate an ordinance similar to the Quimby act, which enables cities and counties to require developers to dedicate land or pay an equivalent fee at a standard not-to-exceed 5 acres per 1,000 population.
- *Redevelopment Agency Financing:* The City of Highland has adopted a redevelopment project area. Once a priority list is established for the redevelopment project area and adopted by the City Council, public improvements can be funded by the Agency through tax increment financing. However, the Redevelopment Agency will not have large sums of money available for this purpose.
- *Joint Powers Agreement:* This allows two or more public entities to share financial or physical resources. Most applicable between local school districts and the City.

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- *Non-Profit Foundation:* Formation of an organization to act as recipient of donations, gifts, bequests, and disbursed grants for park and recreation developments.
- *Direct Purchase of Land:* Several options that allow direct purchase of land are available. Purchase for an annuity allows the City to purchase the property on installments paid out during the seller's lifetime; in return, the seller reduces his taxes. Lease Back agreements allow the City to buy land and lease it out to private groups to defray expenses. Sale Back agreements also allows the City to buy land and then resell with restrictions.
- *Lighting and Landscape Districts, Mello-Roos Districts:* The formation and application of such districts are usually made in newly developing areas. Costs can cover a wide range of acquisition and improvement functions, including flood control, highways, parks and recreation, etc. Some districts can also be established to pass on future operating costs of these facilities to the future residents within the assessment district. Although these fees are initially paid by the developers of the property, the costs are normally passed on to the future homeowners.

State

The State of California offers a variety of funding sources for the acquisition and development of parks and recreation program implementation. Sources include grants, historic preservation, and conservation funds.

- *California Parklands Act of 1980:* Provides for the development, acquisition, or restoration of real property for park, beach, and historical resource preservation purposes. Projects must provide support for indoor/outdoor recreation and be open to the public.
- *Urban Open Space and Recreation Grant Program (SB 174):* Provides 75 percent grant funding for acquisition and development of park and recreation facilities, in addition to some funds for maintenance and operation, handicapped facilities, and innovative programs.
- *Historic Preservation Grants-In-Aid:* Fifty percent matching funds for acquisition, rehabilitation, and preservation of City sites, buildings, structures, and archaeology. Private organizations and individuals are also eligible to apply. The project is required to be on the National Register.

Federal

Through the years, federal monies for park and recreation development have been greatly reduced, and reduction will likely continue in the future. The following sources may or may not be available in the near future:

- *Federal Land and Water Conservation Fund:* Funding limited to acquisition and development of outdoor recreation facilities. Grant money is primarily designated to projects that stress multi-use and could include development of recreational trails which connect several park sites.
- *Recreation and Public Purposes Act:* Establishes public facilities including recreation areas and historic sites on public domain lands.

Open Space and Conservation

Public/Private Ventures

Many parks in the City may well be suited for some type of partnership between the City and a private enterprise. The public/private funding can take a variety of forms. The private partner may make an up-front contribution of funds or agree to secure a taxable municipal bond issue. The City could finance a portion eligible for tax-exempt debt, while a private partner secures taxable debt. The following is a list of organizations that provide financial assistance for public or private groups who desire funds from the private sector.

- *The Foundation Center*

1644 Wilshire Boulevard
Los Angeles, California
(213) 412-4042 90017

- *The Grantsmanship Center*

1015 West Olympic Boulevard
Los Angeles, California
(213) 485-9094 90015

- *The Guide to California Foundations*

c/o Northern California Grantmakers
210 Post Street, Number 814
San Francisco, California 94108

- *The Public Management Institute*

333 Hayes Street
San Francisco, California 94102
(415) 431-8444

Other Private options include:

- *Gifts Catalog*: Some communities and cities have had great success in developing a catalog of needed facilities, equipment, plant material, etc., and then seeking contributions for individual items.

Funding Programs

The implementation of parks and recreation services will be approached with a combination of funding programs. As described above, the funding programs will include tax revenues, public debt financing and revenues created through a combination of private concession agreements, leases, public user fees and developer fees.

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Open Space and Conservation

The emphasis of funding should be placed on achieving a "balance" of public and private sources that produce a result of at least 50 percent public and 50 percent private to support the costs of land acquisition, development and operations.

The following outlines the funding programs which are included in the listings of the public or private categories:

- Benefit Assessment
- Special Tax Bond
- Tax Allocation Bond
- User Fees
- Property Tax
- General Fund
- State Bond Fund
- State Grants
- Federal Loans
- Donations
- Lease Revenue Bonds
- Lease Rental Fees
- Developer Fees
- Growth Fees
- Joint Powers Authority
- Certificates of Participation
- Concession Contracts

Sample Scenario

- A benefit assessment is established for existing parcels and an assessment district formed. The revenue created serves as the basis for acquisition of land for public and private joint ventures.
- The City creates an agreement with a developer and enters into a lease agreement for private commercial/recreational purposes which serves as the basis for creating revenue bonds to support future acquisition/development of public recreation resources.

Open Space and Conservation

This scenario could be applied to a school site or other sites where private interest in recreational/leisure industry activities may serve as an economic incentive to create a new revenue center.

The following describes the application of funding methods to parks and recreation development in terms of acquisition development and operations using both public and private sources.

Acquisition of Land

- Dedicated property resulting from Quimby ordinance
- Benefit assessment creating revenue bonds for acquisition of land
- Special tax fund
- General obligation bond fund
- Land trade with transfer of equity
- Lease revenues/securities

Development of Facilities

- Special tax fund
- Benefit assessment bond fund
- Developer fees, Quimby Act
- Growth management fees
- Property tax
- Lease revenue bonds
- Dedication of facilities resulting from Quimby ordinance
- Concession contracts

Operations

- General fund allocation
- Benefit assessments
- Lease revenues
- User fees
- Concession contracts

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Multi-Use Trails

Trails Versus Other Recreational Needs

As recreation needs grow more demanding, agencies at the local, state, and federal level are being pressured by budget cut-backs. These cut-backs have left cities with shortages of parks, neighborhood playgrounds, tennis courts, swimming facilities, and campgrounds. Recreational trails, when forced to compete for funds with these more traditional needs, often become a low priority for many agencies.

Unlike typical park facilities, recreational trails continue for long distances. The linear nature of these trails and paths puts increased strain on implementation efforts because trails may continue through several different public and private property ownerships, making it sometimes difficult to obtain easements. Actual development of some facilities, such as paved and dedicated bicycle trails, can be very costly because of the need for surveillance over long distances. The City of Highland could implement a volunteer Ranger program, that uses volunteers from equestrian groups, bicycle clubs, and area residents, that would provide the necessary level of enforcement, with minimal operation cost.

Liability

Trail systems pose a number of liabilities to their private and public owners, and to the City responsible for the public trail system. Liabilities come in many forms and may result from improper maintenance or an obstruction in the trail.

The City has a responsibility and liability for events which occur on City-owned property. Where the City has obtained trail easements, the City has a responsibility and corresponding liability exposure if it does not properly protect the property and those who use it. The City assuming responsibility for the trails can include the trail system in its current liability insurance. According to California State statutes, anyone dedicating or providing an easement for any trail, is absolved of all liabilities for any incident or accident occurring on said property. East Highlands Ranch has not yet dedicated any trails to the City of Highland for public use. Eventually, however, these East Highlands Ranch trails will be dedicated to the City.

Proper signage on the trail warning of hazards, limited use, etc. is suggested. Implementation of a volunteer patrol (horseback or bicycles), may help enforce proper trail use and cut back on any hazardous or unsafe trail use.

Trail Construction

The City of Highland Trails Plan should attempt to utilize floodplains, channels, seismic zones, etc. and already existing public utility rights-of-way, so that little, if any, additional expense for improvements is incurred. In many instances, hikers and horseback riders have already created pathways through much of the land unsuitable for development.

In areas where a durable trail may be needed, various recycled or natural materials may be used. The use of recycled materials, such as ground-up concrete, will help preserve remaining natural resources.

Open Space and Conservation

In some areas, asphalt surfaces are required and experience shows this base is suitable for multi-use traffic. Additionally, asphalt surfaces would benefit and encourage use by handicapped persons.

Maintenance of the Trails

To assure public safety and reduce corresponding liability, maintenance of the trail system must be the responsibility of the City. The development of a trail system should be done in an orderly, staged process where the City can evaluate and estimate maintenance expenses for each trail extension.

Development should be as maintenance-free as possible within safety constraints. Trails and development features should not have radical slopes and should be level-graded, free of all obstacles.

Proper maintenance of the trail system will help ensure that users will have safe access to their destination, as well as improve the overall image of the City of Highland. Maintenance of the Highland Trail System may be accomplished by the following:

Public Trails

- A special Trails Maintenance District (TMD), similar to a Landscape Maintenance District (LMD). TMDs are generally lower in operational costs than LMDs because of low upkeep required for trails.
- Assignment to another agency, such as a Department of Parks and Recreation (either City or County).
- Contracted labor with the California Conservation Corps, California Youth Conservation Corps, or the California Youth Authority.
- Promotion among civic and youth organizations for an "adopt-a-trail" program on a regular basis.
- Participation in the Statewide California Trail Days held each April.
- Soliciting of clean-up crews from community and civic organizations.

Private Trails

Maintenance of a private development trail system is usually accomplished through a Homeowners Association (HOA). The HOA may elect to dedicate a trail easement to the City for public use, in which case the City would then assume the liability and the responsibility for maintenance of the trail.

Multi-Use Trails Master Plan

Figure II-D-9 illustrates the proposed Multi-Use Trails Master Plan recommended by the Community Trails Committee. This Master Plan has been integrated into the General Plan using the concepts described above and responding to issues brought up during the General Plan process.

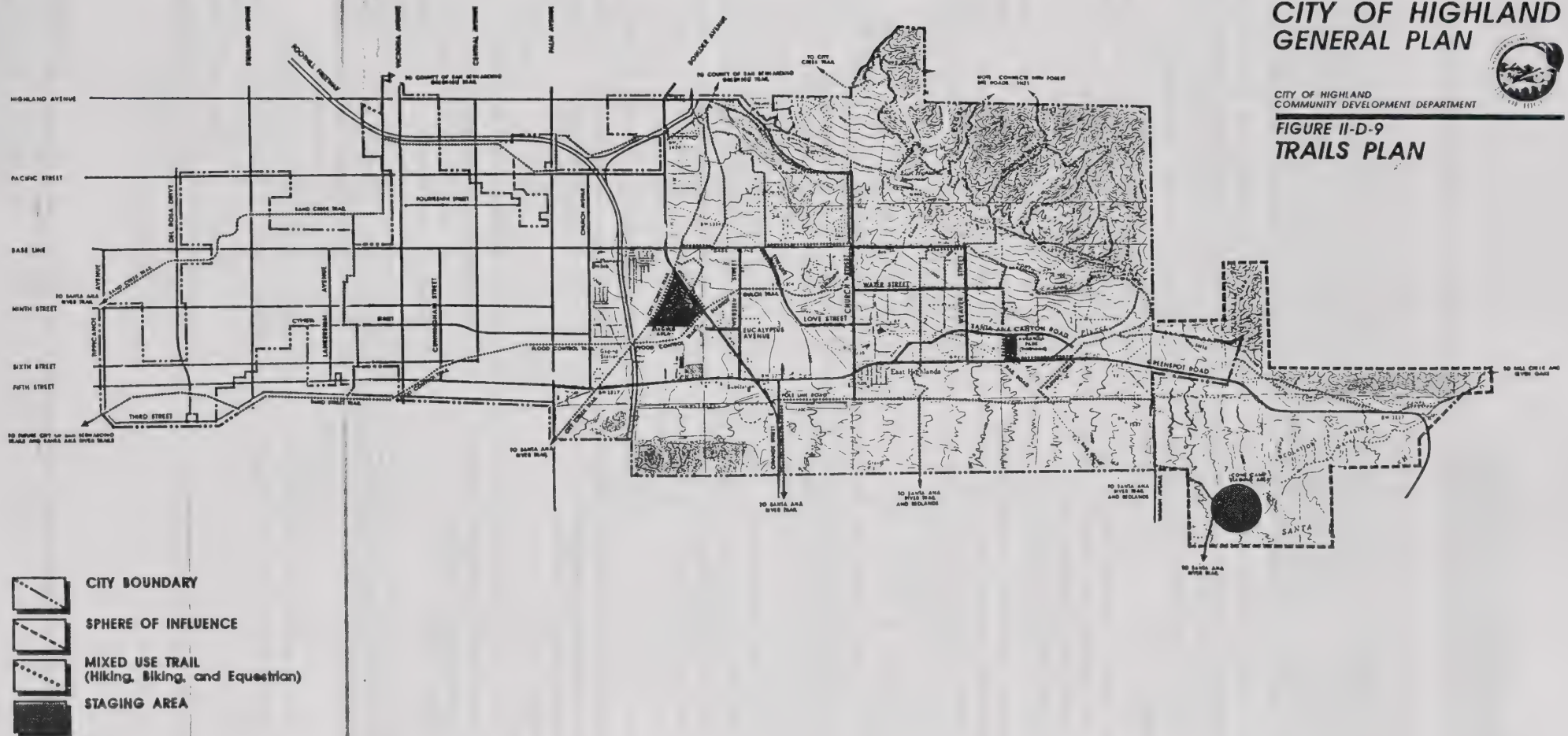
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CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

FIGURE II-D-9 TRAILS PLAN



PLANNING NETWORK

II-D-53



Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 1: Identify limits on the resources needed to support existing and future uses within the City of Highland and its sphere of influence, and ensure that those resources are used wisely and not abused.					
Objective 1.1: Minimize the consumption of water through a combination of water conservation and use of reclaimed water.					
1.1.1	Encourage the use of reclaimed waste-water, stored rainwater, or household gray water for irrigation by implementing the following strategies:	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.1.a	In cooperation with adjacent communities and area water purveyors, develop a plan to initiate the use of reclaimed water; require new development and, where feasible, intensification of existing development to include dual water systems.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.1.1.b	Establish a public education program providing information to City residents regarding the potential and advantages for reuse of water.	18 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget
1.1.1.c	Where feasible, direct storm waters collected in streets and drainage systems to settling basins or small lakes within parks.	20 months post General Plan adoption to study feasibility then - Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.2	Ensure that the following contemporary, feasible technologies are incorporated into new developments or retrofitted into existing developments where intensification is proposed.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.1.2.a	Pressure reducing valves that would reduce supply line pressures in excess of 50 psi, to 50 psi or less.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.2.b	Flush valve operated water closets which are limited to three gallons per flush.	Start program 8 months post General Plan adoption	New Program	Community Development	Department Budget
1.1.2.c	Drinking fountains equipped with self-closing valves.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
1.1.2.d The insulation of all hot water lines for the purpose of providing hot water faster with less water waste, and keeping hot water pipes from heating cold water pipes.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
1.1.2.e Thermostatically controlled mixing valves for baths and showers, and water conserving models of washers and dishwashers.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.2.f Low-flow faucets and showerheads.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
1.1.3 Encourage the watersheds of City Creek, Santa Ana Canyon, and Santa Ana River to remain in their natural state by implementing the following strategies:	Ongoing	New Program	Community Development	Department Budget
1.1.3.a To the extent possible, preserve floodplain and aquifer recharge areas along these floodplains in their natural condition as these areas are among the best sites for groundwater recharge.	Ongoing	New Program	Community Development	Department Budget
1.1.3.b Work with San Bernardino County to ensure natural hydrology is preserved, and major creeks and other natural drainage areas are retained in their natural state.	Ongoing	New Program	Community Development, Public Works	Department Budget
1.1.3.c Review and revise as necessary zoning and subdivision ordinance provisions related to protection of natural vegetation and open space areas.	18 months post General Plan adoption	New Program	Community Development	Department Budget
1.1.4 Encourage the use of primarily drought-tolerant plants and efficient design in landscape application through the use of the following methods: - As part of the City development review of landscaping plans, encourage the use of drought-tolerant plants, and limit turf to lawn dependent uses such as, but not limited to, playing fields. - Where domestic water supplies are used in the irrigation of turf areas, encourage the use of tall fescue varieties or other warm season turf.	Ongoing	New Program	Community Development	Department Budget, Development Fees

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	- To the extent possible, require the preservation of existing native trees and shrubs, as established plants are often adapted to low water consumption. - Within each model home complex, one house shall be landscaped with a drought-tolerant planting concept. - Require residential builders to provide information to prospective buyers of new homes within the City of Highland regarding drought-tolerant planting concepts. - Where possible, require the extensive use of mulch in landscape areas to improve the water-holding capacity of the soil by reducing evaporation and soil compaction.				
1.1.5	In new developments require, and in existing uses encourage, the installation of efficient irrigation systems which minimize runoff and evaporation and which maximize the water which will reach the plant roots. Drip irrigation, soil moisture sensors, and automatic irrigation systems are a few methods of increasing irrigation efficiency.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
Objective 1.2: Maintain, protect, and preserve biologically significant habitats, including riparian areas, woodlands, and other areas of natural significance, providing only such recreational and cultural opportunities as can be developed in a manner sensitive to the environment.					
1.2.1	Ensure that all development, including roads proposed adjacent to riparian and other biologically sensitive habitats, avoid significant impacts to such areas. Require that new development proposed in such locations be designed to: - minimize or eliminate the potential for unauthorized entry into the sensitive area; - create buffer areas adjacent to the sensitive area, incorporating the most passive uses of the adjacent property; - protect the visual seclusion of forage areas from road intrusion by providing vegetative buffering;	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	- provide wildlife movement linkages to water sources; - provide vegetation that can be used by wildlife for cover along roadsides; and - design lighting systems so as to avoid intrusion of night lighting into the sensitive area.				
1.2.1.a	Require that projects determined to be located within a biologically sensitive area prepare documentation which indicates the potential impacts caused by the development and measures which will be used as mitigation.	Ongoing	New Program	Community Development in cooperation with Regional, State, and Federal agencies as appropriate	Department Budget, Applicable Agency Budget, Development Impact Fees
1.2.1.b	Ensure that biological assessments as required in strategy 1.2.1.a are conducted in cooperation with the State Department of Fish and Game and the Fish and Wildlife Service.	Ongoing	Existing Program	Community Development in cooperation with Regional, State, and Federal agencies as appropriate	Department Budget, Applicable Agency Budget, Development Impact Fees
1.2.2	Within existing natural and naturalized areas, preserve existing mature trees and vegetation.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
1.2.2.a	Within rural and hillside residential areas, permit only such natural vegetation to be removed as is necessary to locate home sites and construct access roads.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
1.2.2.b	Require that healthy, mature individual specimen trees be preserved in place, whenever feasible.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
1.2.2.c	Require builders and developers to prune, treat, and maintain existing trees and plant new ones within future rights-of-way, public lands, common areas, and development projects in such a fashion that when the trees become City, association, or private property, the trees will be free of various damage, pests, diseases, and dead branches.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget, Development Fees

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.2.2.d	Incorporate the input of a certified arborist, landscape architect, and/or qualified horticulturist into the review and approval of landscape proposals through the design review process.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
1.2.2.e	Enforce the tree preservation ordinance as a means of managing the preservation of trees and their removal, where necessary.	Ongoing	Existing Program	Community Development, Public Works	Department Budget
1.2.3	Where the removal of existing trees is unavoidable, and relocation of existing trees impractical, ensure that appropriate mitigation is provided.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
1.2.3.a	Require replacement at a 2:1 ratio of all mature trees (those with 24 inch diameters or greater measured 4-1/2 feet above the ground) which are removed.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
1.2.3.b	Coordinate a volunteer community tree planting (reforestation) program.	18 months post General Plan adoption	New Program	Community Development, Public Works, City Council	Department Budget
Objective 1.3: Protect, document, and minimize disruption of sites which have archaeological significance to the City of Highland.					
1.3.1	Ensure that all developments within areas determined to be archaeologically sensitive, avoid significant impacts to such areas. Require that new development proposed in such locations: • Conduct an archaeological records search with the Archaeological Information Center in order to identify potential on-site sensitivities. • In cooperation with a qualified archaeologist, develop mitigation measures for projects found to be located in or near sensitive areas or sites, for the protection, and/or removal of found artifacts or materials.	Ongoing	New Program	Community Development	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
- Require that environmental review be conducted for all applications within the area designated as archaeologically sensitive, including but not limited to grading, earth moving and stockpiling, and building and demolition permits, to ensure that these sites are preserved and protected. - Include the following statement as a condition of approval on all development projects: "If cultural resources are discovered during project construction, all work in the area of the find shall cease, and a qualified archaeologist shall be retained by the project sponsor to investigate the find, and to make recommendations on its disposition. If Human remains are encountered during construction, all work shall cease and the San Bernardino County Coroner's Office shall be contacted pursuant to Health and Safety Code provisions."					
Goal 2: Create and maintain an open space system which will conserve natural resources, preserve scenic beauty, promote a healthful atmosphere, provide open space for outdoor recreation, and protect public health and safety.					
Objective 2.1: Preserve significant visual features which are within, or are visible from the City of Highland, with an emphasis on the preservation of remaining natural hillside areas.					
2.1.1	Work with San Bernardino County and the City of San Bernardino to develop consistent regulations for the protection of ridgelines, slope areas, and hilltops within the surrounding mountain communities.	Initiate contact with County 24 months post General plan adoption, then Ongoing	New Program	Community Development	Department Budget
2.1.2	Require that all excess excavated material (waste materials) be properly removed and disposed of or otherwise placed so as to become an integral part of the site development.	Ongoing	Existing Program	Community Development, Public Works	Department Budget, Development Fees

Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
2.1.3 Require that dwelling units and structures within hillside areas be located on the site in such a manner as to utilize ridgelines and landscape plant materials as a backdrop for the structures, and the structures themselves to provide maximum concealment of cut slopes.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
2.1.4 Require retention of existing vegetation within hillside development areas in any part of the total development, which is not designated for grading or construction, unless removed as part of an approved fuel modification program.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
2.1.5 Require that existing vegetation which cannot be preserved in place, but is suitable for transplanting, be relocated elsewhere on the site.	Ongoing	New Program	Community Development	Department Budget, Development Fees
2.1.6 Require that dwelling units and structures be located on the site in a manner which: • Protects views from existing development; • retains opportunities for views from dwellings; • preserves or enhances vistas, particularly those seen from public places; and • preserves mature trees, natural hydrology, native plant materials, and areas of visual interest.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
2.1.7 Utilize grading permit procedures to ensure that site designs for within hillside development proposals conform to the natural terrain and consider the visual aspects from both within and outside of the project area.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
2.1.8 Work with San Bernardino County and the City of San Bernardino to identify prominent ridges, slopes, and hilltops within surrounding communities outside of the Highland Sphere of Influence to be subject to application of hillside guidelines.	Initiate contact with County 24 months post General Plan adoption	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
2.1.9	Concurrent with the submittal of a grading plan, the submittal and approval by the appropriate City departments of erosion control plans is required, prior to the approval of the grading plan. Require that erosion control measures be implemented as soon as possible after initiation of grading operations and that they remain in operation until improvement construction has begun or vegetation has grown in within the controlled area.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
2.1.10	Enact provisions within the grading and subdivision ordinances to require special precautions that minimize soil erodability by incorporating provisions relating to surface drainage and restoration of the natural drainage surface, the attenuation of slope instability, reductions in the amount of impermeable surface, and techniques that enhance groundwater recharge and local water recovery.	18 months post General Plan adoption	New Program	Community Development	Department Budget
Objective 2.2: Achieve and maintain a system of public and private park and recreation facilities which meets the active and passive recreational needs of Highland residents of all ages.					
2.2.1	Maintain an open space and recreation program emphasizing the development of active recreation areas, preservation of natural open space, and development of a community center, as opposed to the acquisition of traditional neighborhood park land.	Ongoing	New Program	Community Development	Department Budget
2.2.1.a	Pursue joint public/private development of recreation facilities, especially in areas where joint development would maximize use of existing facilities, as well as add new land to the facility.	Ongoing	New Program	Community Development	Department Budget
2.2.1.b	Identify any existing active recreation areas and promote enlargement of such areas.	12 months post General Plan adoption	New Program	Community Development	Department Budget
2.2.1.c	Initiate a program to identify significant environmental areas and to protect the significant features of such areas.	Initiate 18 months post General Plan adoption	New Program	Community Development	Department Budget
2.2.1.d	Pursue protection of City Creek, Santa Ana Canyon, and Santa Ana River wash area through a joint management agreement with all affected agencies.	Initiate contact with agencies 18 months post General Plan adoption	New Program	Community Development	Department Budget

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Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
2.2.1.e	Pursue development of an integrated trails system connecting to the Santa Ana River regional trail network, as well as inclusion of natural open space preserve areas along the trail.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget
2.2.2	Implement the joint school/park facility concept described under school facilities.	Adopt master agreement 36 months post General Plan adoption	New Program	Community Development	Department Budget
2.2.3	Conduct periodic assessment of park and recreation facilities and services, evaluating adequacy of facilities serving the City; personnel staffing and program needs; and five-year facility, equipment, and staffing needs based on anticipated growth and desired level of service.	Annual assessment	New Program	Community Development, Public Works	Department Budget
2.2.4	Prepare and adopt a Master Plan of Parks and Recreation to identify specific future sites for parks and recreational open space by: • Coordinating with State and County agencies to encourage the use of existing and planned flood control rights-of-way, reservoirs, floodplains, and utility easements for open space and both active and passive recreational uses. • Incorporating, where feasible, the use of the Santa Ana River and other drainage channels and easements for recreational and open space uses. • Locating and designating specific sites for other future park acreage and recreational facilities.	Start planning process 24 months post General Plan adoption	New Program	Community Development	Department Budget
2.2.5	Incorporate the guidelines and standards in park location and development decisions per Table II-D-8, Recreation Facilities and Standards and Figure II-D-7, Park Development Guidelines.	Ongoing	New Program	Community Development	Development Budget, Development Fees
2.2.6	Adopt a density bonus program for development which includes usable park and open space lands above the required standard.	Adopt program 8 months post General Plan adoption	New Program	Community Development	Department Budget

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Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
2.2.7	Require that new specific plans and planned unit developments (PUDs) incorporate sufficient park and recreation facilities along with natural open space areas, where appropriate, to serve the needs of their future residents.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
2.2.8	As a supplement to existing development fees, explore the following funding and acquisition sources for the acquisition and preservation of land suitable for greenbelt, habitat preservation, and other natural open space areas.	Provide report to City Council 36 months post General Plan adoption	New Program	Community Development	Department Budget
2.2.8.a	Establish assessment district(s) over undeveloped areas to acquire and develop open space resources. Pursue and establish separate assessment districts within developed areas to fund acquisition and development of parks and recreation facilities, and open space areas necessary to make up existing deficits.	See Strategy 2.2.8	New Program	Community Development	Department Budget
2.2.8.b	Work with private corporations, foundations, and nature conservancies to acquire open space resources.	See Strategy 2.2.8	New Program	Community Development	Department Budget
2.2.9	Develop a Transfer of Development Rights (TDR) ordinance for lands to be designated natural open space.	24 months post General Plan adoption	New Program	Community Development	Department Budget
2.2.10	Conduct a Citywide public information program to provide information regarding proposed park development concepts	Ongoing using City newsletter	New Program	Community Development	Department Budget
2.2.11	Unless there is an overriding public recreation need, require that open space areas which are set aside as part of a development project be maintained privately. Require that open space easements, deed restrictions, and/or other such restrictions be granted and recorded over portions of development sites which are set aside for open space.	Ongoing	New Program	Community Development	Department Budget
2.2.12	Where open space lands have been designated within a development to offset an increase in project density, ensure through the use of deed restrictions, open space easements and/or for other such restrictions, that such areas are retained as permanent open space.	Ongoing	New Program	Community Development	Development Review Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Objective 2.3: Preserve mineral resources for eventual extraction by the community, only to the extent that such operations can be safely managed without significant impacts to the community, and assure that adequate supplies of such resources are available to meet the future needs of the City.					
2.3.1	Identify any significant mineral resources within the City and protect them from encroachment by residential or other incompatible development, for future use.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
2.3.2	Adopt policies and procedures for mining and processing of mineral resources.	Adopt policies 18 months post General Plan adoption	New Program	Community Development	Department Budget
2.3.3	Develop criteria for location and operation of mineral processing so as to minimize adverse impacts to the environment, watersheds, wildlife, aesthetic resources, public health and safety, and adjacent land uses.	Develop criteria 18 months post General Plan adoption	New Program	Community Development	Department Budget
2.3.4	Establish and implement standards requiring reclamation of any mined areas.	Adopt criteria 18 months post General Plan adoption	New Program	Community Development	Department Budget
2.3.5	Review land development proposals near resource areas or mining operations with the goal of achieving land use compatibility with mining.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
2.3.6	Require Mining Reclamation Plans for any proposed mining operations in the planning area to be approved in compliance with the Public Resources Code; the Surface Mining Reclamation Act of 1975; the State Administration Code; Natural Resources, Mining and Geology; State Mining and Geology Board; and the City General Plan and Development Code. Require that mining plans include, but are not limited to the following:	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
	information of the effects of the proposed mining operation on terrain, natural and man-made slopes and slope stability, permeability of soils, and groundwater quality;				

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	- plans for the control of erosion and sedimentation; protection of water quality; control of run-off and flooding; drainage control; protection of wildlife; and control of noise, dust, vibration, smoke, odors, and lighting; - plans for the rehabilitation and reclamation of areas no longer used for mineral extraction, including plans for the future use of reclaimed lands; and - detailed information on the proposed timing of extraction and reclamation operations.				
2.3.7	Investigate the adoption of a reclamation fee program designed to mitigate remaining scars from previous quarry operations.	Complete investigation 36 months post General Plan adoption	New Program	Community Development	Department Budget
2.3.8	Pursue and implement a joint-powers agreement with adjacent cities and involved agencies for the management of natural resources located in the Santa Ana River.	Initiate contact with adjacent cities by 6 months post General Plan adoption.	New Program	Community Development	Department Budget
2.3.9	Permit non-mining uses within areas designated or classified MRZ-2 only if a finding is made that no significant impacts on future regional mineral resources will result from project approval.	Ongoing	New Program	Community Development	Department Budget
Goal 3: To develop and maintain a Citywide multi-use trail system which enhances the quality of life of Highland residents.					
Objective 3.1: Adopt a Citywide trail system which provides opportunities for hiking, equestrian, and bicycle use.					
3.1.1	Work with local, state, federal agencies, and adjoining cities and jurisdictions, interest groups, and private landowners, in an effort to promote a Citywide trail system, and to secure trail access through purchase, easement, or by other means.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget
3.1.2	Provide equestrian, bicycling, and pedestrian staging areas consistent with the Trails Plan shown in the City of Highland General Plan (Figure II-D-9) and in the Circulation Element.	Ongoing	New Program	Community Development	Department Budget and available private and grant monies

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Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
3.1.3	Implement adopted trail standards.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
3.1.4	Require that residential, commercial, and industrial developments within the City be required to dedicate and construct trail links within their boundaries as part of the Trail System Master Plan.	Ongoing	New Program	Community Development	Department Budget, Development Fees
3.1.5	Begin acquisition of trail easements or rights-of-way for the adopted trail route plan.	Post General Plan adoption	New Program	Community Development	Department Budget, Development Fees, various available funding sources
3.1.6	Support the acquisition of trail rights-of-way through dedication in conjunction with development activity or acts of philanthropy which occur prior to adoption of a route plan.	Ongoing	New Program	Community Development	Department Budget
3.1.7	Implement two general levels of trail use • Low Use and Natural Area: standards shall apply to sections of the trail where terrain, remoteness, expected low usage, easement, or other restrictions make larger, multiple trails infeasible. • Urban (Maximum Accessibility): standards define a relatively flat, wide trail for use where little physical challenge is required, and where wheelchair access can be accomplished. The grades are low, and the trail is wide and compacted or surfaced.	Post General Plan adoption	New Program	Community Development	Department Budget
3.1.8	Develop and adopt a Master Trails Plan to define and implement the community multi-use trails system. The Master Trails Plan, which may be prepared one trail at a time, should include, at a minimum, the following: • Indication of an exact trail location (e.g., which side of street, channel, etc.). • Identification of each trail with a name, approximate length, and type.	24 months post General Plan adoption	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	• Specific design standards for implementation and completion of trails. • Identification of logical rest areas and facilities. • Establishment of a specific set of sign standards for the various types of trails and locations. • Identification of fiscal policies for the implementation and maintenance of the trail system. • Evaluation of comments made by the public.				
Goal 4: Provide a viable opportunity for Highland residents to use non-motorized transportation for trips within the City.					
Objective 4.1: Provide opportunity for the use of abandoned road, utility, flood control, and railroad rights-of-way or other easements for trail uses.					
4.1.1	Use lands already in public ownership or proposed for public acquisition such as rights-of-way for flood control channels, abandoned railroad lines, and fire control roads for trails, wherever possible.	Ongoing	Existing Program	Community Development	Department Budget
4.1.2	Where possible, locate trail easements within City-required landscaping or other easements.	Ongoing	New Program	Community Development	Department Budget
4.1.3	Establish a trails system exclusively for pedestrian, equestrian, and bicycling uses and prohibit all motorized vehicles from using the trail system.	See Strategy 3.1.8	New Program	Community Development	Department Budget
4.1.4	Use active and abandoned road, utility, and railroad rights-of-way, and other easements for non-vehicular circulation in all new development when found feasible.	Ongoing	New Program	Community Development	Department Budget
Objective 4.2: To preserve, to the extent possible, existing formal and informal trail routes in the City, particularly routes which provide major north-south and east-west access.					
4.2.1	Where an established trail is jeopardized by impending development or subdivision activity, require the dedication of trail easements, where appropriate, to establish a planned trail system alignment.	Ongoing	New Program	Community Development	Department Budget, Development Fees

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
4.2.2	Require proposed development adjacent to trail systems to dedicate land for trailhead access points.	Ongoing	New Program	Community Development	Department Budget, Development Fees
4.2.3	Existing rights-of-way and surplus public properties should be utilized for these staging areas, whenever possible.	Ongoing	New Program	Community Development	Department Budget, Development Fees
Goal 5: A trail system which interconnects all portions of the City with appropriate public facilities and recreational amenities, and provides connections to trails in adjacent jurisdictions, while maximizing access for all persons, including persons with limited mobility.					
Objective 5.1: Develop and maintain connections to recreational facilities, schools, existing transportation routes, natural features, and regional trail systems.					
5.1.1	Provide trail connections between and/or along the following major features where feasible: Parks Schools Base Line Boulder Avenue/Orange Street (Foothill Freeway) City Creek County of San Bernardino Flood Control Channels County Regional Trails East Highlands Ranch Highland Avenue Highland Historic District Plunge Creek State Foothill Freeway San Bernardino National Forest Santa Ana River Sand Creek Trails in adjoining jurisdictions	Ongoing implementation of master trail plan as described in Strategy 3.1.8	New Program	Community Development	Department Budget, Development Fees, and other private and public grant monies as available
5.1.2	Provide bicycle and pedestrian trails along major home-to-work and other travel routes, where appropriate.	See Strategy 3.1.8	New Program	Community Development	Department Budget
5.1.3	Seek to construct or assist in the construction of those portions of the San Bernardino County Regional Trail system which are located within Highland.	Coordinated as part of Strategy 3.1.8	Enhancement of Existing Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
5.1.4	Require the dedication of trail easements, where appropriate, for establishing a planned trails system alignment, or where an established trail is jeopardized by impending development or subdivision activity.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
5.1.5	Access should be provided to the maximum extent feasible to trail users of all abilities and all ages, including the physically and visually disabled.	Ongoing	New Program	Community Development	Department Budget, Development Fees
5.1.6	Where possible, design new trail development to reduce visitor dependence on the automobile. Where feasible, convenient and efficient transit should be provided to enable trail users to gain access to the trail system.	Ongoing	New Program	Community Development	Department Budget, Development Fees
Goal 6: To develop and promote a trail system that will protect the health and safety of all users.					
Objective 6.1: To promote specific operational guidelines to enhance the safety of the trail system.					
6.1.1	The following hierarchy of users shall be followed: Bicyclists must yield right-of-way to all other users. Runners must yield to hikers and equestrians. Hikers must yield to equestrians.	Standards for use established as part of Strategy 3.1.8 implementation	New Program	Community Development	Department Budget
6.1.2	Since bicyclists must share a trail with other uses, cyclists must adhere to the following requirements:	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.2.a	Alert hikers and equestrians of their presence (particularly when approaching from behind).	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.2.b	Travel no faster than 15 mph, unless conditions warrant reduced speed.	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.2.c	Slow to 5 mph when passing.	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.2.d	If necessary, bicyclists should dismount and wait for equestrians to pass or signal them through.	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.3	A multiple-use trail where bicycle use is permitted should strive to maintain a 200-foot line-of-sight throughout the length of the trail. Separate, dual, and, if necessary, triple trails are recommended where there is heavy trail use. The Maximum Accessibility standards apply only in urban areas.	See Strategy 6.1.1	New Program	Community Development	Department Budget

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
6.1.4	Incorporate where feasible and where the safety and security of all users can be protected, all compatible multiple uses on a single trail. Where a single trail is not feasible, the trail system shall provide alternate or parallel routes so that the trail segment can safely support a variety of uses.	Ongoing	New Program	Community Development	Department Budget
6.1.5	Right-of-way should be wide enough for safe passage of users, for signing, fencing, separation of trails, trailheads, and where appropriate, landscaping.	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.6	Trails in developed areas should have a setback of at least five feet from an existing or future curb face unless suitable fencing is provided to separate the trail from the street.	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.7	Narrow equestrian/hiking trails (less than six feet wide) with steep side slopes (greater than 30 percent) must have passing areas at regular intervals to allow hikers and other equestrians to pass.	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.8	"Multiple Uses" on City of Highland recreational trails in urban areas may include bicycling and hiking. In natural or low-use areas, multiple-use may include any combination of bicycling, hiking, or equestrian uses.	See Strategy 6.1.1	New Program	Community Development	Department Budget
6.1.9	Implement a volunteer Ranger Patrol program that uses volunteers from equestrian groups, bicycle clubs, and area residents.	Initiate program 36 months post General Plan adoption	New Program	Community Development in cooperation with volunteers and private agencies	Department Budget and various volunteer and private sources
6.1.10	All trail users should be informed of the trail system's etiquette requirements through trailhead signs and brochures.	See Strategy 6.1.1	New Program	Community Development	Department Budget

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
6.1.11 The City will reserve the right to temporarily close trails for any reason, including the following: • When hazardous conditions exist (e.g., floods, landslides), or when trail areas are soft or wet (and therefore subject to damage) due to rains. Either of these conditions (or others) may require that portions of trails be closed for extended periods of time. Notice of closures shall be given through signage, media outlets, and other appropriate or available means.	Ongoing	New Program	Community Development, Public Works	Department Budget
6.1.12 The City will promote adherence to the following code of off-road bicycling responsibility, as developed by the International Mountain Bicycling Association:	See Strategy 6.1.11	New Program	Community Development, Public Works	Department Budget
6.1.12.a Ride On Open Trails Only - Respect trail closures, don't trespass, obtain authority as needed. Your riding examples will determine what trails remain open to cyclists.	See Strategy 6.1.11	New Program	Community Development, Public Works	Department Budget
6.1.12.b Control Your Bicycle - Inattention for even a second can cause a disaster. Excessive speed maims and threatens people.	See Strategy 6.1.11	New Program	Community Development, Public Works	Department Budget
6.1.12.c Always Yield Trail - Make your approach known with a friendly greeting. Show your respect when passing others by slowing to a walk or even stopping. Anticipate that other trail users may be around corners.	See Strategy 6.1.11	New Program	Community Development, Public Works	Department Budget
6.1.12.d Never Spook Animals - All animals are startled by an unannounced approach, a sudden movement, or a loud noise. Give animals extra room and time to adjust to you. In passing, use special care and follow the directions of equestrians. Leave gates as you found them, or as marked.	See Strategy 6.1.11	New Program	Community Development, Public Works	Department Budget
6.1.12.e Leave No Trace - Practice Low-Impact Cycling. Even on open trails, you shouldn't ride under conditions where you will leave evidence of your passing, such as shortly after a rain. Stay on the trail and don't create any new ones.	See Strategy 6.1.11	New Program	Community Development, Public Works	Department Budget

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
6.1.12.f	Plan Ahead - Be self-sufficient at all times, keep your machine in good repair and carry necessary supplies for changes in weather or other conditions.	See Strategy 6.1.1	New Program	Community Development, Public Works	Department Budget
Objective 6.2: Provide adequate signage along all portions of the Citywide trail system which are open to the public. Standards for trail signage include the following:					
6.2.1	A consistent style for signage, including a unified logo or other identification, shall be developed for the regional trails system.	Implement as part of Strategy 3.1.8	New Program	Community Development	Department Budget
6.2.2	Signage on trails shall be constructed of vandal-resistant materials which are either natural or replicate natural materials. All signage shall be unobtrusive, yet clearly visible and identifiable.	Implement as part of Strategy 3.1.8	New Program	Community Development	Department Budget
6.2.3	The use of symbols on signage shall be encouraged.	Implement as part of Strategy 3.1.8	New Program	Community Development	Department Budget
6.2.4	Where wording on signs is used, positive rather than negative language should be used. The use of extensive "No" signing is discouraged; signage should emphasize permitted activities.	Implement as part of Strategy 3.1.8	New Program	Community Development	Department Budget
6.2.5	The number of signs on a trail should reflect trail usage. More signage may be appropriate in urban or high-use areas; in general, less signage should be installed in natural and low-use areas.	Implement as part of Strategy 3.1.8	New Program	Community Development	Department Budget
6.2.6	Where appropriate, the following types of signs should be provided: • Signage should identify points of public access. Trailhead locations or access points should be identified on roadways, where appropriate. • Destinations along the trail route, and distances to each, should be identified. This should include distances to vista points or other key trail features and to connections with other trails. • Areas where access is hazardous or restricted should be clearly identified. All closed trails should be clearly marked as closed.	Implement as part of Strategy 3.1.8	New Program	Community Development	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	• Areas in which dogs or other animals are not allowed should be clearly marked. • Private property adjacent to trails should be clearly delineated. • Areas in which restoration of trails or habitat is in progress should be clearly marked. • Signage should be provided for trails which are dedicated to or sponsored by an organization or individual. • Vista points, pullouts, or rest stops should be clearly identified. • Signage should be provided to inform the public of trail use and etiquette. • On paved trails and in other appropriate locations, speed limits for bicyclists and equestrians should be clearly marked.				
Objective 6.3: Establish an educational program that will protect the health and safety of trail users by encouraging proper etiquette and procedures.					
6.3.1	Develop an education program to communicate to all segments of the community an understanding of the trail system's goals and objectives and to convey all aspects of trail use. Education in trail use etiquette and low impact use is a key measure towards the reduction of negative trail use impacts.	Establish program 2 months post master trail plan adoption	New Program	Community Development	Department Budget
6.3.2	Develop an education program to acquaint potential trail users with safety considerations, especially for bicycle routes, and on the rules and regulations which apply when using specific trail segments. The primary purpose of this program will be to avoid threats to public safety and minimize accidents.	Establish program 2 months post master trail plan adoption	New Program	Community Development	Department Budget

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Objective 6.4: Develop a management program to monitor trails throughout the trails system. This program should concern itself with delegating management responsibilities for trail segments to ensure that trails are adequately supervised and maintained.					
6.4.1	Monitor public use of the trail system on a regular basis, so that as changes in patterns and levels of trail use are reported, priorities for new trail development and maintenance will be adjusted accordingly.	Ongoing	New Program	Community Development, Public Works	Department Budget
6.4.2	Vigorously enforce trail regulations as a means of controlling trail use, and ensure that regulations for different trail segments within various jurisdictions do not conflict.	Ongoing	New Program	Community Development, Public Works, County Sheriff's Department	Department Budget
6.4.3	Develop a program to enlist volunteers and volunteer organizations on trail development, operations and maintenance, education, and enforcement activities related to trails.	Develop program 2 months post trail master plan adoption	New Program	Community Development, Public Works	Department Budget
6.4.4	Locate trailheads to be apparent to the public and situated to facilitate supervision.	In coordination with Strategy 3.1.8	New Program	Community Development	Department Budget
6.4.5	Do not develop or open trails and/or easements to public use until a public agency (which may be the City of Highland) or private organization agrees to accept responsibility of the maintenance and liability of the trail and/or easement. In the case of trails adjacent to private land, the adjacent owner shall not bear responsibility for trail maintenance or liability from the public's use of the easement.	Ongoing	New Program	Community Development, Public Works	Department Budget
6.4.6	Monitor all dedicated public trails and/or easements on a continuing basis and maintain an up-to-date map of all existing and proposed dedicated public trail easements in the General Plan. Existing trail easements or alignments shall be mapped in their correct positions; proposed alignments shall be mapped in general locations. The Master Plan of Trails shall be reviewed during consideration of applications for permits or development approvals to ensure that new development does not result in the loss of existing or potential public use of dedicated easements (Figure II-D-9).	Bi-annual update of map/information	New Program	Community Development, Public Works	Department Budget

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Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
6.4.7	Ensure that all proposed trails leading from the City, as well as the Santa Ana River Trail, into the San Bernardino National Forest are coordinated with the San Bernardino National Forest Service.	Ongoing Coordination	New Program	Community Development, Public Works	Department Budget, Development Review Fees
6.4.8	Ensure that all trail uses on trails leading from the City of Highland and the Santa Ana River Trail into the National Forest are all in compliance with the County of San Bernardino National Forest Land and Resource Management Plan.	Ongoing Coordination	New Program	Community Development Public Works	Department Budget, Development Review Fees

**PUBLIC HEALTH
AND SAFETY**

Introduction

Purpose and Function

The Public Health and Safety Element contains provisions that relate to the protection of life, health and property from natural and man-made hazards. In conformance with Section 65302(g) of the Government Code, the element is designed to identify areas where public and private decisions on land use need to be sensitive to hazardous conditions caused by seismic activity, slope instability, flooding, hazardous materials, fire hazards and peak water demand, emergency preparedness, crime, airport land use compatibility and safety, and air quality. This element also provides discussion regarding the City's readiness to respond to both natural and man-made disasters which may occur within the General Plan study area.

The Public Health and Safety Element provides the goals and strategies necessary to protect Highland residents from the hazards associated with natural and man-made environments.

It is the intent of the Public Safety Element of the Highland General Plan to:

- Develop a descriptive record of the identified known hazards in the community.
- Establish an acceptable level of risk for existing and future developments.
- Incorporate safety considerations into the City's planning and decisionmaking process to reduce identifiable risks.

The Health and Safety Element has been organized to address the following public safety issues:

- Geology and Seismicity
- Slope Instability
- Flooding
- Hazardous Materials
- Fire Hazards and Peak Water Demand
- Emergency Preparedness
- Crime Prevention
- Airport Land Use Compatibility and Safety
- Air Quality

Public Health and Safety

Goals Summary

Goal 1

Create a secure public environment which minimizes potential loss of life and property damage, as well as social, economic, and environmental disruption resulting from natural and man-made disasters.

Goal 2

Maintain effective emergency preparedness and response programs.

Goal 3

A reduction in mobile and stationary source air pollutant emissions through cooperation and endorsement of the San Bernardino Regional Air Quality Plan; reductions in the amount of vehicular travel; promoting efficient land use patterns; maximizing ride sharing, the use of public transit, and other transportation management techniques; reducing local energy consumption; and other feasible techniques which achieve the following principles:

- Achievement of significant air quality improvements in such a way that continued economic growth can be sustained.
- Achievement of necessary air quality related lifestyle and economic changes through market incentives where feasible and through regulatory measures where necessary.

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Existing Setting

Geology and Seismicity

Geology

During the Pleistocene Epoch, the area which is now the San Bernardino Valley was down-dropped as the San Bernardino Mountains were uplifted. Over geologic time, this event created a gently sloping plain made up predominantly of layers of alluvium which were deposited by the rivers and creeks which drain from the San Bernardino Mountains. The Santa Ana River and Mill Creek produced the major coalescing alluvial fans, and smaller fans were created by East Twin and City Creeks. Figure II-E-1 shows generalized geology in the Highland area.

Older alluvial deposits laid down after the Pliocene and Pleistocene Epochs of the Tertiary and Quaternary Periods extend down from the foothills and cover approximately half of the study area. These older alluvial materials consist of terrace deposits in major stream canyons, older conglomerates of alluvial fans downstream from canyon mouths, and deposits under mesas.

Much of the study area is underlain by younger alluvial deposits, including river channel deposits, which consist of unconsolidated gravel, sand, and silt. These types of materials are what appears near the surface of the Santa Ana River course in the eastern portion of the City. The younger alluvium is highly permeable and conducive to groundwater recharge, particularly in streambeds.

Seismicity

Highland's seismic setting and that of the surrounding cities is dominated by the San Andreas fault zone. This zone is part of a larger fault system that runs nearly the length of California making up a portion of the eastern boundary of the circum-pacific seismic belt. Although thousands of minor earthquake shocks occur annually along this zone, only about 500 are strong enough to be perceptible by residents.

In an attempt to protect the state's residents from known geologic hazards associated with this particular fault zone, the Alquist-Priolo Geologic Hazard Zones Act was enacted by the State Legislature in 1972 to control construction on sites threatened by surface displacement from earthquake faulting. Under this act, the state geologist has mapped "Special Studies Zones" along active and potentially active faults throughout the state. A portion of the Alquist-Priolo Special Studies Zone runs through the eastern portion of the City of Highland as shown in Figure II-E-3. Prior to approval of structures within this zone, a geologic study must be undertaken to determine the precise location and necessary set backs from identified faults.

North and South branches of the San Andreas Fault along with a number of minor and trace faults of the San Andreas Special Studies Zone run through the City of Highland. The last major earthquake along the South Branch of the San Andreas was the 1857 Fort Tejon earthquake, estimated at a Richter magnitude of 8.0 plus. In addition to the San Andreas fault zone, the San Jacinto fault zone is located approximately 4.5 miles southwest of the City. This fault, although not located within the General Plan study area, has a maximum credible earthquake Richter magnitude of 8.5 and could contribute to significant ground shaking within the region.

Public Health and Safety

Existing geologic data indicates that earthquakes with Richter magnitudes of 7.0 or more can be expected along the southern branch of the of the San Andreas on the average of every 100 to 200 years. It has been estimated that there is a 20 to 30 percent probability of a major earthquake (7.0 magnitude or greater) within the next 30 years in the San Bernardino region (U.S. Department of the Interior, Geologic Survey, 1988).

Slope Instability

Foothill slopes of the San Bernardino Mountains exist as a major feature in the eastern portion of the City and its sphere of influence. These slopes have been subject to erosion, seismic and non-seismic related landslides, mudslides, and slope collapse in the past. Areas categorized as having slope instability can be found in Figure II-E-2.

In addition, slopes left from former mineral extraction activities exist in the study area. Without reclamation, such slopes can become serious hazards as development encroaches on mining activities.

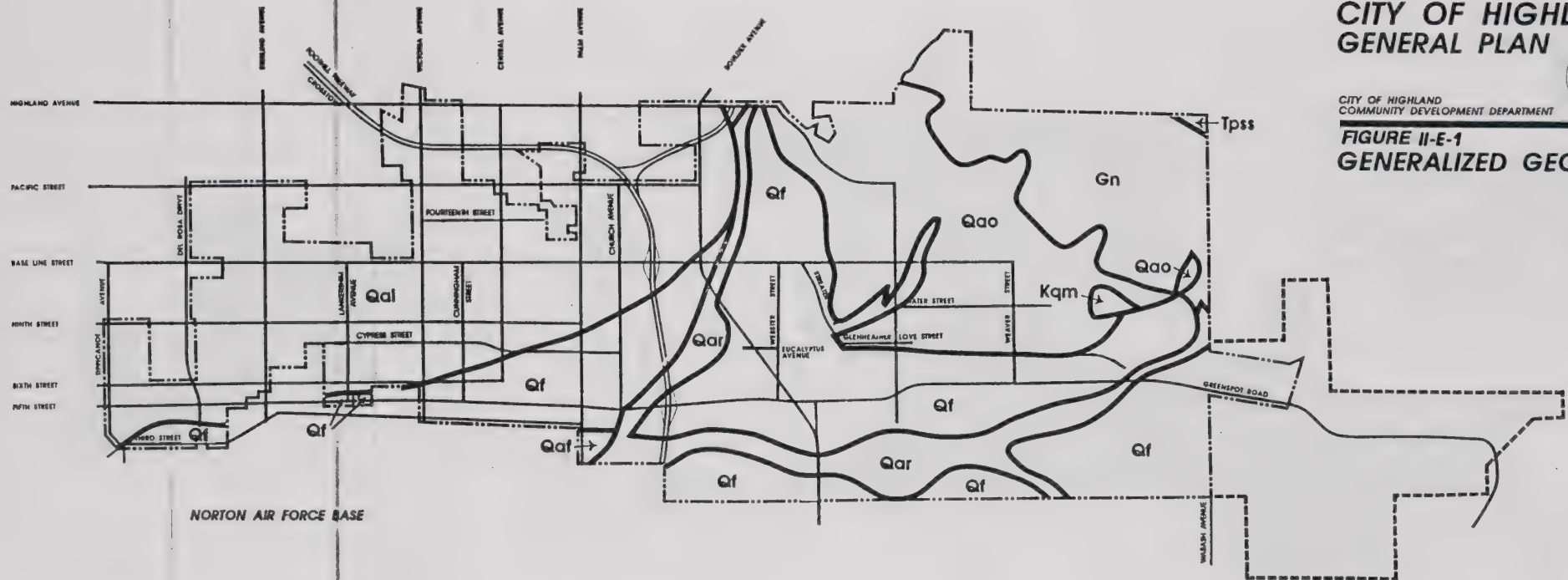
October 27, 1992

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-E-1
GENERALIZED GEOLOGY**



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  ARTIFICIAL FILL
-  ACTIVE RIVER CHANNEL ALLUVIUM
-  ALLUVIAL FAN DEPOSITS
-  YOUNGER ALLUVIUM UNDIFFERENTIATED

-  OLDER ALLUVIUM UNDIFFERENTIATED
-  POTATO SANDSTONE
-  GNEISS AND SCHIST
-  CRETACEOUS QUARTZ MENZONITE

PLANNING NETWORK

II-E-5

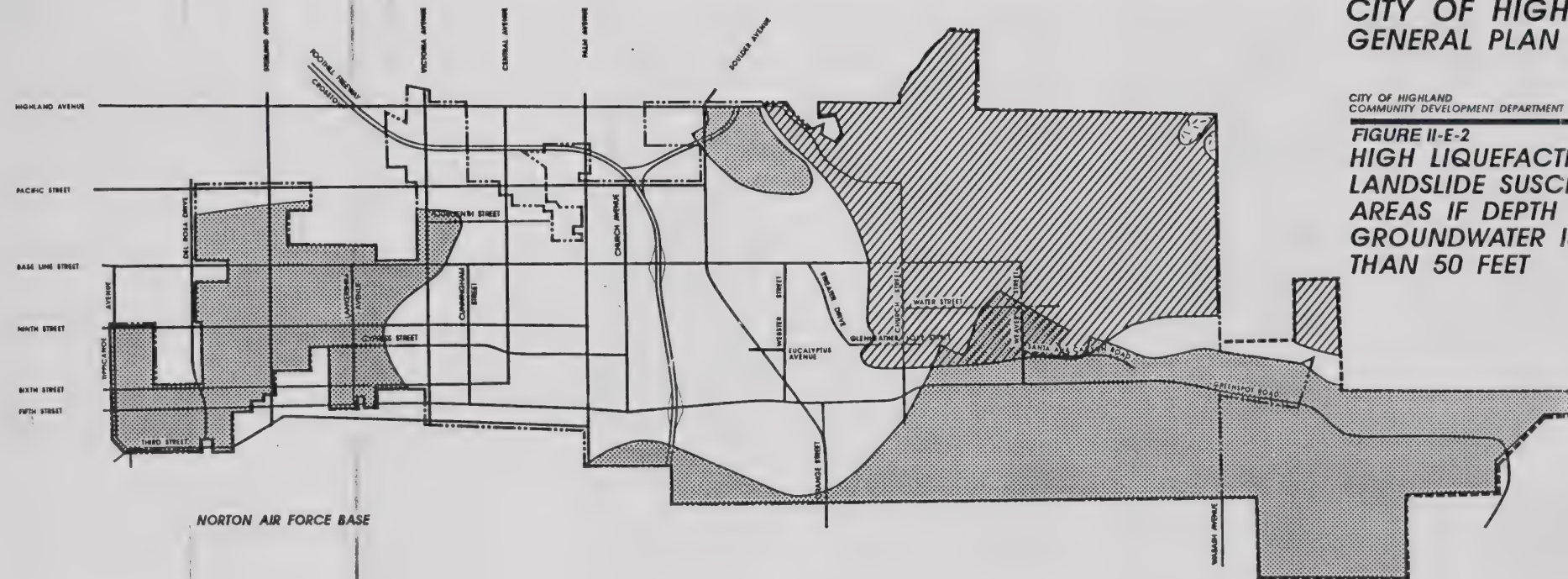


CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-E-2
HIGH LIQUEFACTION AND
LANDSLIDE SUSCEPTIBILITY
AREAS IF DEPTH OF
GROUNDWATER IS LESS
THAN 50 FEET**



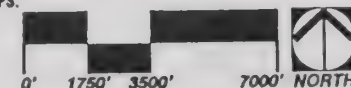
- CITY BOUNDARY
- SPHERE OF INFLUENCE
- HIGH LIQUEFACTION SUSCEPTIBILITY AREA
- LOW TO MODERATE LANDSLIDE SUSCEPTIBILITY AREA
- MAPPED EXISTING LANDSLIDE

SOURCE: COUNTY OF SAN BERNARDINO GEOLOGIC HAZARD OVERLAY MAPS.

NOTE: THIS FIGURE IS A GENERAL REPRESENTATION ONLY. FOR EXACT LOCATIONS REFER TO THE COUNTY OF SAN BERNARDINO GEOLOGIC HAZARD OVERLAY MAPS.

PLANNING NETWORK

II-E-6



Flooding

Natural Drainage Areas

Located at the head waters of the Santa Ana River, the City of Highland receives a considerable amount of runoff generated from watershed areas in the San Bernardino Mountains. This runoff flows along eight intermittent water courses that traverse the City. From east to west they include: Oak Creek Plunge Creek, Elder Creek, Bledsoe Creek, Cook Creek, City Creek, Sand Creek, and Upper Warm Creek (Sand Creek, Small Canyon Creek and Bald Ridge Creek flow into Upper Warm Creek) (Figure II-E-5). Normal excess flow from these creeks is controlled by the use of spreading basins at specific locations throughout the study area (Figure II-E-5). Of the above mentioned water courses, City Creek and Plunge Creek act as major natural drainage facilities for the City.

The Plunge Creek watershed contains 16.9 square miles and is located northeast of the City of Highland. Tributaries of Plunge Creek are Little Mill Creek and Fredalba Creek. Included within the watershed area are the communities of Running Springs, Fredalba, and Smiley Park. The average creek discharge for the last 64 years has been 422.5 acre feet per month. Historic maximum flows have been recorded as 5,340 cfs on March 2, 1938; and 4,770 cfs on both November 12, 1964 and September 29, 1965 (EVWD Water Supply Plan, 1987). The maximum monthly mean flow for the creeks when combined with flow from several upstream irrigation diversion canals are summarized in Tables II-E-1 and II-E-2. From this data, it can be seen that the maximum monthly flow of City Creek occurs in March, the minimum average flow occurs in October, and the month with the highest variation is February.

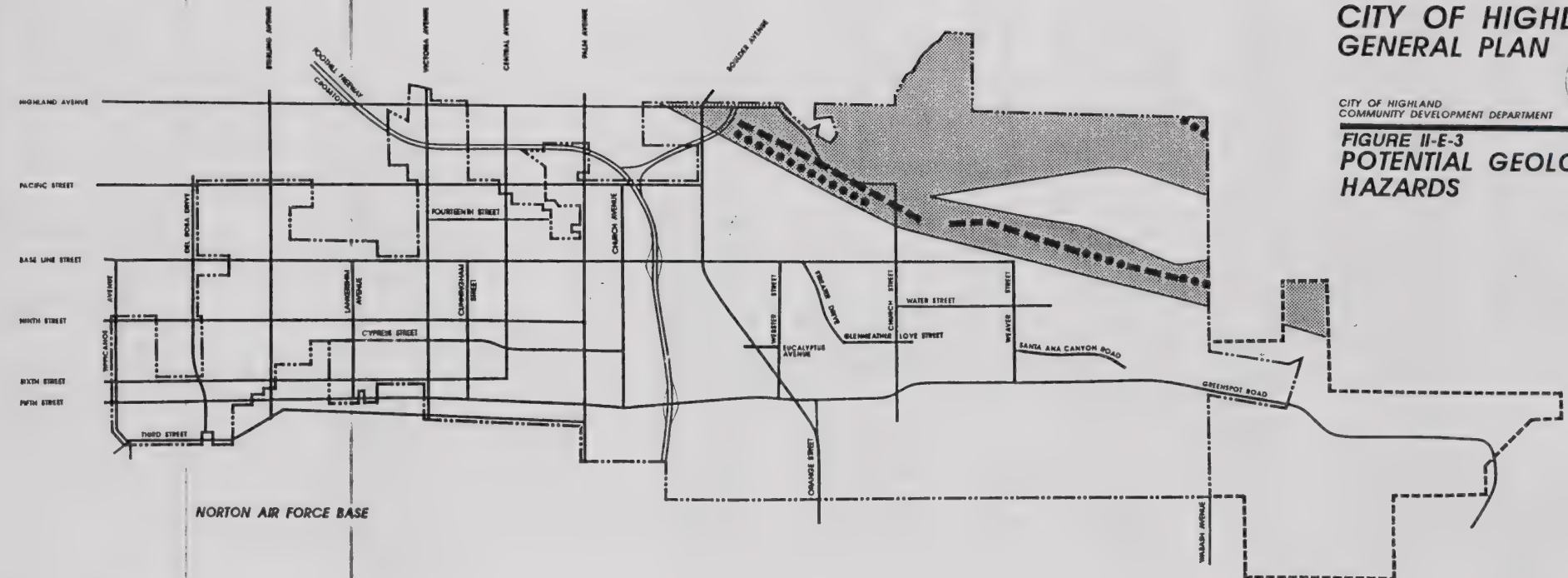
The City Creek watershed is located along both sides of Boulder Avenue north of the Boulder/Highland Avenues intersection. According to the EVWD flows along the City Creek are highly seasonal, with a wet period from December to May and a dry period from June to September. The wettest month (March) has a long-term average flow of about 31.4 cfs, while the driest months (August and September) have average flows of about 1.0 cfs (Tables II-E-1 and II-E-2). City Creek also tends to have a wide variation in the rate of flow which can change daily, or even on an hourly basis.

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-E-3
POTENTIAL GEOLOGIC
HAZARDS**



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  ALQUIST-PRIOLO SPECIAL STUDIES ZONE
-  APPROXIMATE FAULT LOCATION
-  ACTUAL FAULT LOCATION

The City of Highland is responsible for ensuring that new development is protected from 100 year to storm flows in accordance with the Federal Flood Insurance Program. In January 1976, the San Bernardino County Flood Control District authorized the development of plans for a comprehensive system of storm drains 24 inches and larger. This project, entitled "Project No. 6" encompasses approximately 42 square miles of area which includes the City of Highland General Plan study area.

100 Year Floodplain: According to the Federal Emergency Management Agency (FEMA), portions of the City fall within the 100-year Flood Plain (Figure II-E-6). This is an area of land subject to potential inundation by a storm whose intensity occurs on the average of once every 100 years.

Communities subject to flooding can participate in the federal flood insurance program. This program offers flood insurance to property owners in flood prone areas. In return for the coverage, the participating community is required to regulate new development in hazardous areas. As a member of the federal program, Highland has already adopted standards for flood protection that relate to minimum building elevation, floodproofing, and anchoring.

The establishment of the local flood control improvement priorities are reviewed and determined annually by the District's local Zone Advisory Committee.

The nearest dam is the proposed Seven Oaks Dam, now under construction northeast of the study area. The City of Highland is located within the Dam's inundation area. Most of the City of Highland would be affected if dam failure occurs at full capacity. If such a case were to occur, water could extend as far north as Pacific Street in some locations. In addition, all southern exits from the City could be impassable during a major inundation event.

Other facilities located near the San Andreas Special Studies Zone which have potential for damage and/or flooding during a seismic event include the East Highlands Reservoir, a smaller reservoir located within Bledsoe Gulch, the North Fork Canal, and the San Bernardino Valley Municipal Water District (SBVMWD) transmission line.

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
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FIGURE II-E-4 PRELIMINARY SEVEN OAKS DAM EMERGENCY PLAN



NOTE: THE INUNDATED AREAS SHOWN ON THIS MAP REFLECT EVENTS OF AN EXTREMELY REMOTE NATURE. THESE RESULTS ARE NOT IN ANY WAY INTENDED TO REFLECT UPON THE INTEGRITY OF THE SEVEN OAKS DAM. FLOODED AREAS SHOWN ARE BASED ON DAM FAILURE AT FULL POOL, ELEVATION 2580.0 FEET, NGVD.

SOURCE: U.S. ARMY CORP OF ENGINEERS.

PLANNING NETWORK

II-E-10

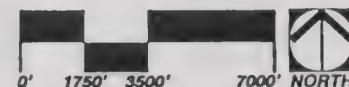


Table II-E-1
Monthly Mean Flows of Plunge Creek
Acre-feet/Month (1939-1969)

Month	Creek Only		Combined Flow	
	Mean	Standard Dev.	Mean	Standard Dev.
January	701	1,460	943	1,502
February	1,005	2,233	1,330	2,611
March	1,077	1,567	1,560	2,052
April	773	1,067	942	1,076
May	176	326	485	451
June	78	160	233	220
July	69	87	125	121
August	14	25	92	95
September	37	80	103	151
October	10	10	92	89
November	192	547	241	466
December	552	1,277	565	1,144

Source: East Valley Water District Supply Plan, 1987.

Table II-E-2
Monthly Mean Flows of City Creek
Cubic Feet per Second

Month	Creek Only			Combined Flow		
	Mean	STDV (a)	C.V. (b)	Mean	STDV	C.V.
January	15.8	28.9	183	15.8	27.0	171
February	31.3	67.4	215	30.9	64.0	207
March	31.4	52.2	166	32.5	50.6	156
April	19.4	27.6	142	20.9	26.9	129
May	8.3	10.8	130	10.8	10.0	93
June	3.0	5.1	170	5.6	5.2	93
July	1.5	2.9	193	2.8	3.3	118
August	1.0	2.2	220	1.8	2.4	133
September	1.0	1.7	170	1.7	1.9	112
October	1.1	1.3	118	2.2	1.7	77
November	3.1	6.2	200	4.8	6.6	138
December	9.4	15.2	162	9.5	12.7	134
Monthly Average	10.5	18.2	173	11.6	17.7	153

Source: East Valley Water District Supply Plan, 1987.

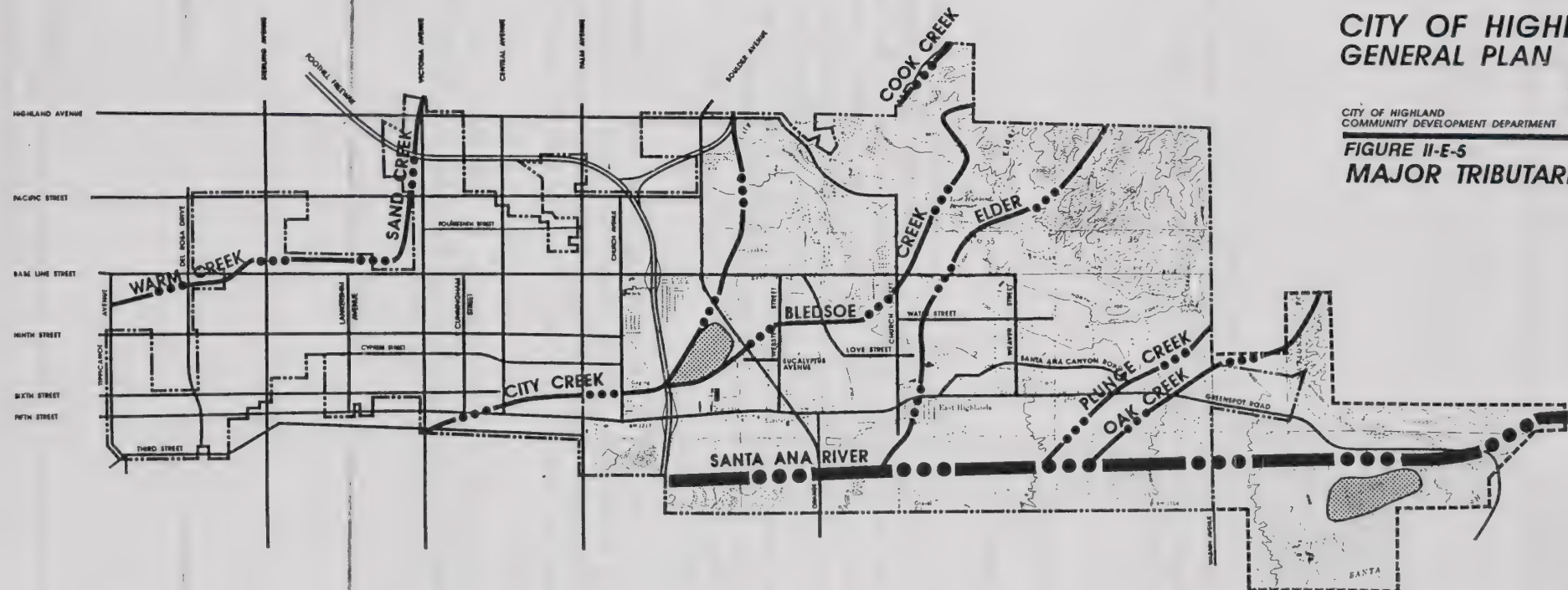
Notes: (a) STDV = standard deviation
(b) C.V. = coefficient of variation

CITY OF HIGHLAND GENERAL PLAN

CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



**FIGURE II-E-5
MAJOR TRIBUTARIES**



SOURCE: UNITED STATES GEOLOGICAL SURVEY

PLANNING NETWORK

II-E-13



Public Health and Safety

Hazardous Materials

Local and Regional Hazardous Waste Management

The use and storage of hazardous materials within the study area is regulated by both the Federal Environmental Protection Agency and County of San Bernardino Environmental Health Department. Depending on the type of storage and the nature of the business use, three different types of hazardous materials permits are required by the County. These are:

- underground tank permits
- hazardous materials, handlers permits
- hazardous waste generator permits

Any business that has 55 gallons or 500 pounds of any hazardous material, or 200 cubic feet of compressed gas, currently must file a Business Plan in order to obtain a hazardous materials permit from the County. In addition, the use and storage of hazardous materials requires a fire department permit under Article 80 of the Uniform Building Code. The Business Plan contains information on approximately 20 items, including business procedures, inventory, and containment of stored materials in the event of a spill or release. The Business Plan is required by the State Health and Safety Code, and is implemented through the County. One copy is filed with the county and copies are also sent to the local fire and police departments for the jurisdiction in which the business is located. In accordance with the Right to Know Law, any information contained in the Business Plan (except maps) must be available for public review.

The County of San Bernardino, in response to State legislation, has adopted a Hazardous Waste Management Plan (HWMP). As further required by the State, all cities with the County must also adopt a City Hazardous Waste Management Plan. To accomplish this, the City may prepare its own plan, enact an ordinance requiring that land use decisions be consistent with the County's Plan, or add policies into its own General Plan.

On November 27, 1990, the City of Highland adopted ordinance no. 118, which added a section to the Highland Municipal Code requiring consistency with the San Bernardino County Hazardous waste Management Plan pending completion of the City's comprehensive General Plan.

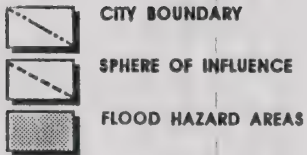
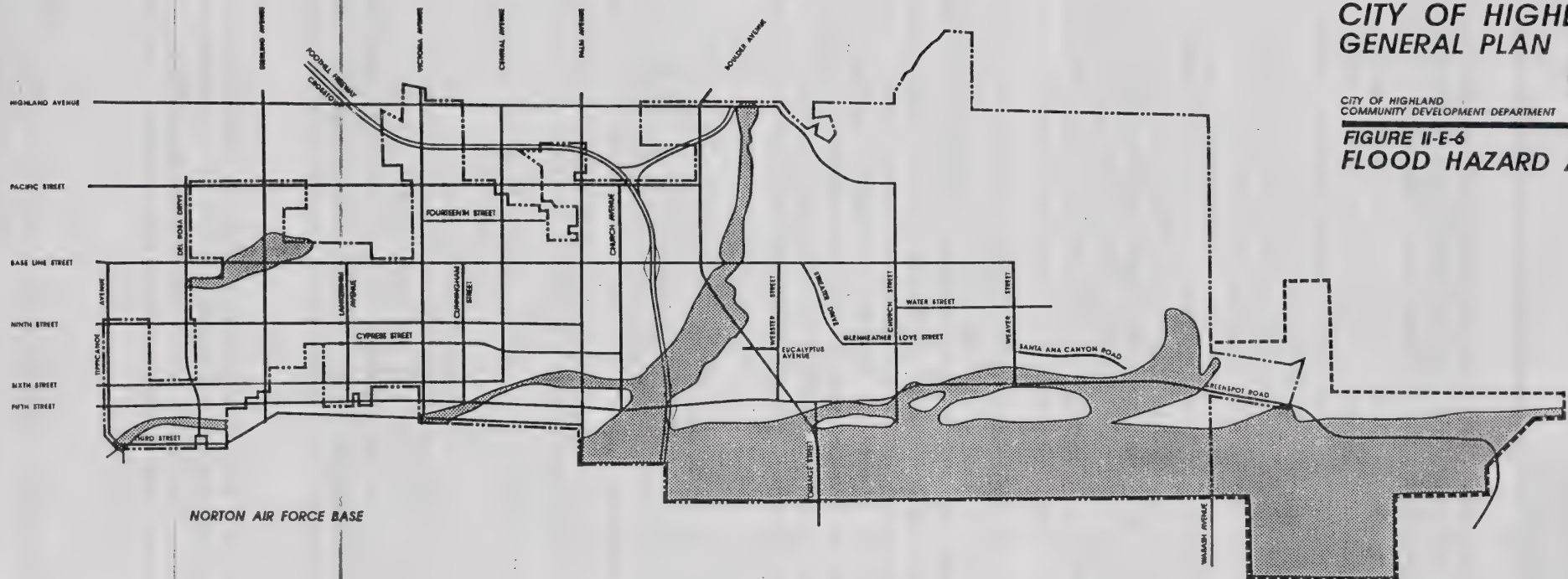
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FIGURE II-E-6 FLOOD HAZARD AREAS



NOTE: FLOOD HAZARD AREAS ARE GENERALIZED REPRESENTATIONS OF DETAILED FEMA MAPS ON FILE AT THE CITY OF HIGHLAND.

PLANNING NETWORK

II-E-15



Public Health and Safety

As part of the City's General Plan effort, the City incorporated applicable background information and policies within the San Bernardino HWMP into the Health and Safety Element to meet the Highland's goal of providing regulations for the safe and responsible management of hazardous waste within the City.

Norton Air Force Base Hazardous Waste Management

Norton Air Force Base (NAFB), which is directly adjacent to the City of Highland, is a large user of hazardous materials. It is estimated that 35,000 gallons and 330,000 pounds of hazardous waste were managed at Norton AFB during 1990. Major waste categories include solvents, petroleum, oils, and lubricants (POL), paint wastes, fuel wastes, low level radioactive wastes, photochemical wastes, batteries, heavy metals, biomedical wastes, asbestos, PCBs, pesticides, and wastes generated from site cleanups.

The Air Force Base also has a number of above and below ground storage tanks. Forty-four above ground storage tanks which store JP-4 jet fuel currently exist on the base. The two largest tanks (2,310,000-gallon capacity each) are supplied by an off-base CAL-NEV pipeline for use with associated underground storage tanks for supply to the flightline fuel distribution system. The base has 58 active and 20 inactive or abandoned on-site underground storage tanks. These tanks are currently being removed as they are deactivated. A study to be completed in the spring of 1992 is also under way to identify and locate and remediate any unknown underground storage tanks. The base is presently operating under a waiver obtained from the County Department of Environmental Health Services which allows the base to postpone compliance with leak detection, spill and over spill prevention, and cathodic protection until 1998.

The base has a Hazardous Management Plan which identifies responsibilities and procedures for managing hazardous waste, used petroleum products, and PCB's. Norton AFB also has an Oil and Hazardous Substance Spill prevention and Response Plan which includes a detailed description of each facility that houses a hazardous materials. The Spill Prevention and Response Plan also provides spill prevention practices, and site specific contingency plans, and Material Safety Data Sheets (MSDSs) for the hazardous materials stored on base (Norton AFB Disposal and Reuse DEIS, 1992).

Hazardous wastes generated on the base are collected in drums at designated accumulation points which can store 55 gallons or more of hazardous waste for up to 90 days. Satellite accumulation points have also been designated which can store up to 55 gallons of hazardous waste for 1 year under state regulations. When satellite accumulation points have accumulated 55 gallons of hazardous waste, it must be moved to a designated accumulation point or transferred from the accumulation points to the Defense Reutilization and Marketing Office storage facility for disposal. The Defense Reutilization and Marketing Office uses a permitted contractor for off-base disposal of the collected wastes. The office currently operates under an interim permit issued to the base by the Department of Health Services.

Upon the closure of Norton Air Force Base, all accumulation points and satellite accumulation points will also be closed. The Defense Reutilization and Marketing Office will be relocated to March Air Force Base while the Norton facility undergoes closure. A closure plan for the Defense Reutilization and Marketing Office and Industrial Waste Treatment Plant has been submitted to the EPA and DHS for approval, and is currently being reviewed.

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The Air Force has established an Installation Restoration Program designed to identify, characterize, and remediate environmental contamination in its installations. Prior to the passage of the Superfund Amendments Reauthorization Act in 1986 and the establishment of the National Contingency Plan for hazardous wastes sites, Air Force Installation Restoration Program procedures followed the Department of Defense policy guidelines mirroring the Environmental Protection Agency's Superfund Program. Since the passage of the Superfund Amendments Reauthorization Act, federal facilities, such as Norton AFB, have been placed on a federal docket for possible inclusion on the National Priorities List for toxic cleanup. Norton AFB was listed on the National Priorities List in July 1987 due to TCE groundwater contamination in the northeast portion of the base (Norton AFB Disposal and Reuse DEIS, 1992).

On March 13, 1990, the U.S. Air Force entered into an Interagency Agreement with the Environmental Protection Agency Region IX and the State of California. The California Department of Health and Safety was the designated single state agency responsible for the federal programs carried out under this agreement. Authority to oversee the Norton AFB Installation Restoration Program lies with the California Environmental Protection Agency, Department of Toxic Substances Control.

Fire Hazards and Prevention

Wildland and Urban Fires

As identified in Figure II-E-7, Fire Hazards and Safety Overlay Areas, the northeastern most portion of Highland is more susceptible to fires than other areas of the City, due to the location of fire-prone vegetation, less convenient access by fire fighting equipment, steep topography, and seasonal conditions that exacerbate fire hazard conditions. In response to this threat, hillside fire maintenance and protection is provided to the City of Highland by the California Department of Forestry and Fire Warden Department (CDFWD) (CSA38).

The CDFWD provides wildland and urban fire services to the City including the enforcement of preventative brush clearance around structures, vegetation management programs, and preventative burning programs in the hillside areas of the City. Areas outside the City that are within National Forest lands are served by the U.S. Forest Service.

Established, more urban areas of the Highland, generate more general fire service needs, particularly in the southwest portion of the City. Typical calls are associated with these urban types of services include enforcement of fire codes and regulations, structure and vehicle fires, emergency and rescue, paramedic services, and small vacant lot brush fires. Discussion regarding the location and staffing of local fire facilities has been included in the Public Services and Facilities Element of the General Plan.

Public Health and Safety

Peak Water Demand and Water Supply

Highland currently has a water storage capacity of 15 million gallons. According to the East Valley Water District, the average daily water demand is 225 gallons per capita per day within their service area, which includes the City of Highland. Currently, the City has adequate water supply to accommodate an identified peak water demand of approximately 450 gallons per capita per day. According to the District's Water Master Plan, however, water storage capacity will need to be increased by almost 30 million gallons to meet the ultimate maximum day demands within the District.

Most fire hydrants in the City have a water flow of 1,000 gallons per minute (GPM), which does not meet the CDFWD's current fire flow requirements for new development (Table II-E-3).

Table II-E-3
CDFWD Fire Flow Requirements

Land Use	Fire Flow
Agriculture/Open Space	1,000 gpm for 2 hours
Single-family Residential	1,500 gpm for 2 hours
Multi-family residential	2,500 gpm for 2 hours
Commercial/Industrial	3,500 gpm for 3 hours

Source: California Department of Forestry and Fire Warden Department,
September 1992.

Emergency Preparedness

The purpose of Emergency Preparedness is to protect the health, safety, and welfare of the general public during and after natural, man-made, or attack-related emergencies. Such emergencies include flooding, high winds, earthquakes and other geologic hazards, hazardous material, attack-related incidents, and wildfire.

As required by state law, the County of San Bernardino has adopted an Emergency Plan to deal with large-scale disasters, such as an earthquake. The City of Highland currently participates in the County's Emergency Plan pending the adoption the City of Highland Emergency Plan, now under preparation. The San Bernardino County Forestry and Fire Protection Department also has an Area Specific Fire Protection and Emergency Medical Master Plan covering the City of Highland which outlines a systematic approach for the provision of fire protection and emergency medical services.

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In addition, the American Red Cross provides a wide range of emergency response support services within the City, ranging from a single residential fire to a community-wide disaster. This non-profit organization has an area disaster action team coordinator who will respond to any residential fire or other emergency within an hour of notification to estimate the damage and the need for further relief services. The American Red Cross works closely with the San Bernardino Department of Forestry and Fire Protection and the school districts to provide damage assessment, shelter for families left homeless by a disaster or emergency, and referral services to affected households that need further assistance from state and federal agencies or the American Red Cross. Red Cross personnel also assist with evacuations, identifying missing persons, and reuniting displaced families. The organization operates its own radio system for emergency communications.

Evacuation Routes

In the event of an emergency, the San Bernardino County General Plan (1989) has designated potential evacuation routes. Major evacuation routes within the San Bernardino Valley include Interstates 10, 15 and 215; State Highways 30, 31, 60, 66, and 71; and numerous major and secondary highways. This list is not intended to be comprehensive, and specific evacuation routes would be designated during an emergency, since earthquakes, floods, fires, or other disasters may make certain routes impassible.

Crime Prevention

Area crimes have increased dramatically in the past few years. Most likely associated to the recent increase in area population, burglary and auto thefts have continued to be the most common crime in the City.

To combat these problems, the City of Highlands has created and promoted an extensive Neighborhood Watch Program. This program encourages area residents to immediately report any unusual activities to the San Bernardino County Sheriff's Department. The program has proven to be an effective deterrent to criminal activities in many neighborhoods.

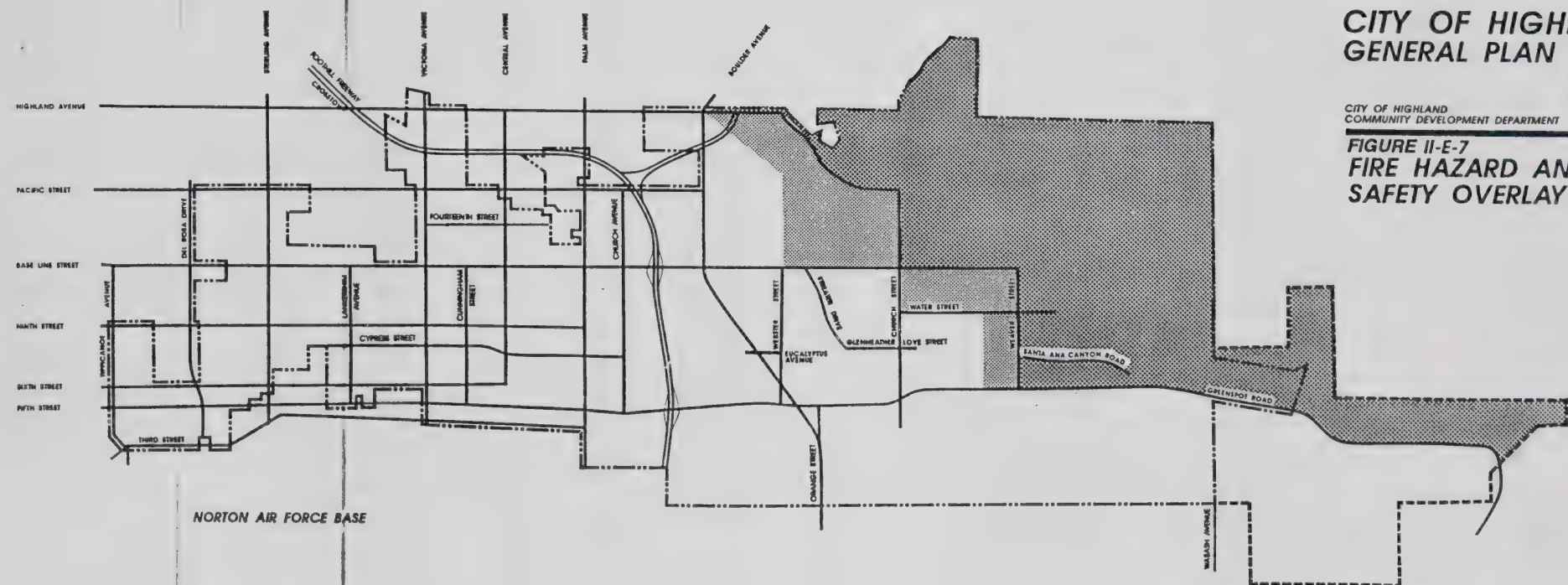
The San Bernardino County Sheriff's Department has one Community Service Officer who serves the entire county. The officer is responsible for initiating and assisting in the formation of area neighborhood watch programs.

CITY OF HIGHLAND GENERAL PLAN

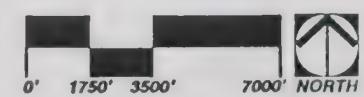
CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



**FIGURE II-E-7
FIRE HAZARD AND
SAFETY OVERLAY AREAS**



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  FIRE ZONE I
-  FIRE ZONE II



Airport Land Use Compatibility and Safety

There are three airports in the general vicinity of Highland. Two of the airports are general aviation airports, the Rialto Municipal Airport to the west and Redlands Municipal Airport to the southeast. The third airport in the area is Norton Air Force Base, which is restricted to military use at the present time, but is slated for closure in the near future. A re-use plan has been prepared for the site that proposes to convert the current military operations into a civilian commercial airport facility.

Norton Air Force Base

Portions of the study area to the east of the Norton Air Force Base are impacted by the operations of the military aircraft takeoffs and landings. As part of the Airport Installation Compatibility Use Zones (AICUZ) study completed by the Air Force, areas of potential safety hazards associated with flight operations within the area surrounding the base have been identified. The existing aircraft accident potential zones include the following designations:

- Clear zone
- Accident Potential Zone I
- Accident Potential Zone II

These zones are also shown in Figure II-E-14. The Clear Zone, which is the most restrictive, extends into a small portion of Highland. That area is within the wash and left open for flood control purposes. No structures are permitted within the Clear Zone.

In Accident Potential Zone I, structures are regulated by use, size, and density. Any uses with a large assemblage of people, such as hospitals, schools, and restaurants are not compatible within this zone.

Accident Potential Zone II is less restrictive. Dwelling units at a density of one to two units per acre are permitted. The APZ designation is a risk management technique to mitigate potentially hazardous conditions.

Upon closure of the Norton AFB, the APZ designations would most likely be modified to reflect Federal Aviation Administration (FAA) regulations Part 77 and the Airport Land Use Guidelines from the Division of Aeronautics. Although most of the area under the existing APZ is open space, the lifting of some of the development restrictions near the end of the runway may provide opportunities for development in the area. Refer to the concepts, options, and alternatives subsection for further discussion of the FAA regulations Part 77 and their relationship to the Norton AFB closure and reuse plan.

Public Health and Safety

Air Quality

The City of Highland is located within the South Coast Air Basin. This Basin is composed of the coastal plain and tributary valleys that extend across the Los Angeles and Orange Counties, as well as the western portions of Riverside and San Bernardino Counties. The Highland area's air quality is largely influenced by the air quality in western portions of the Basin. Two primary factors influence the area's current air quality: the climate, and the amount of indicator pollutants emitted into the air.

Air quality within the area is the product of several factors: climate, location, topography, automobile and truck traffic, building activity, mining activities, and industrial emissions.

Highland's chief air quality problem at present is ozone, the primary constituent of photochemical smog. Motor vehicle emissions accumulated throughout the Basin and transported to the area are the main source of ozone. While traffic within Highland contributes to ozone in the air, it is only a fraction of the total monitored levels.

In addition to mobile emissions sources, the study area includes several rock, sand and gravel operations which produce particulate emissions.

Climate

The climate of the area is typical of Southern California's Mediterranean climate with hot, dry summers and mild, moist winters. This pattern is influenced by the semi-permanent high pressure zone of the eastern Pacific Ocean which is responsible for deflecting storms away from the Basin and allowing for the mild climate indigenous to the region. However, occasional periods of extreme heat, Santana (locally referred to as "Santa Ana") winds, and winter storms interrupt the otherwise mild weather pattern.

Winds are an important climatic feature with regard to air quality. The South Coast Air Quality Management District (SCAQMD) notes that the low average wind speeds of the South Coast Air Basin have limited effectiveness in dispersing accumulated air pollutants. Instead, vertical currents induced by heating of the mountain slopes carry much of the pollution through mountain passes or upward and over Basin mountains during the spring and early summer months. From late summer through winter, however, winds originating in the mountains occur too late in the day to fully disperse pollutants, thus allowing them to accumulate within the Basin for one or more days.

Nighttime winds emanate from the southeast, and are generally mild and cool. Daytime winds originate off the coast and carry with them significant amounts of industrial and automobile air pollutants from the densely urbanized western portion of the Basin to the eastern portions of the Basin.

From five to ten times a year, the area is subjected to strong hot dry desert winds called Santana winds. Such winds originate in the upper deserts and push their way through the mountain passes within the San Bernardino Mountains, passing across inland areas, including Highland. Santana winds can persist for several hours or several days, with gusts up to 60 miles per hour. Santana winds generally occur during the spring and fall.

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Inversions are a critical climatic factor that can significantly impede the vertical dispersion of air pollutants. Inversion layers can create an effective "lid" over the Basin, wherein temperature increases with altitude, thus obstructing vertical air movement. Air pollutants can no longer rise through the inversion, thereby concentrating within the Basin. Inversion layers generally dissipate during the day, once the ground temperature warms up to that of the air temperature.

Air Quality

Highland is located adjacent to the San Bernardino Air Quality Monitoring Station. The SCAQMD has stated that air quality within the area can be assumed to be the same as that of the nearest monitored station. Air quality readings for the past three years are shown in Table II-E-4.

Highland has participated in the preparation of a Regional Air Quality Plan for San Bernardino County and its fifteen cities within the South Coast Air Basin. The air quality plan includes an Air Quality Element with goals and policies that the Participants agreed through consensus would become a part of each jurisdiction's general plan. It also includes a menu of actions which each jurisdiction can evaluate and tailor to its specific needs, and incorporated into its own Implementation Plan.

As part of the General Plan effort, the City of Highland incorporated applicable portions of the Regional Air Quality Plan into the Concepts, Options, and Alternatives, and Goals, Objectives and Strategies section of the Public Health and Safety Element. Background studies, maps and related technical information are included as an Appendix to the General Plan.

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Table II-E-4
Air Quality Summary

	State Standard	Federal Standard	Year Measured	Maximum Reading	Days Over Standards (State and Federal)
Ozone	0.09 ppm 1 hr. avg.	0.12 ppm 1 hr. avg.	1988	0.28	S-173 F-121
			1989	0.30	S-159 F-115
			1990	0.29	S-129 F-78
Carbon Monoxide	9.1 ppm	9.5 ppm	1988	7.6	S-0 F-0
			1989	8.1	S-0 F-0
			1990	6.0	S-0 F-0
Nitrogen Dioxide	0.25 ppm 1 hr. avg.	0.05 ppm yr. avg.	1988	0.19	S-0 F-0
			1989	0.18	S-0 F-0
			1990	0.20	S-0 F-*
Sulphur Dioxide	0.05 ppm 24 hr. avg.	.14 ppm 24 hr. avg.	1988	Not Measured	S-0 F-0
			1989	.006	S-0 F-0
			1990	.001**	S-** F-**

Source: South Coast Air Quality Management District, Air Quality Data - San Bernardino Monitoring Station, 1988, 1989, 1990.

* .0343 for year as compared to federal standard of .05 per year

** Less than 12 full months of data. Monitoring discontinued.

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Issues

Geology and Seismicity

The seismic setting of the City of Highland and surrounding developing areas is dominated by the San Andreas fault zone. Several "active" and "potentially active" faults of the San Andreas fault zone present within and near the Highland area (see Figure II-E-3) have been zoned for special studies as required by the Alquist Priolo Special Studies Zones Act. Primary hazards, such as ground ruptures; and secondary hazards such as rockfalls, ground subsidence, dam overtopping or failure, and seiches in local water tanks and reservoirs, related to potential seismic activity within this fault zone remain as a significant concern to all within the community.

As development is distanced from the San Andreas Fault Zone, the threat of surface rupture diminishes. Secondary hazards caused by severe ground shaking due to the underlying soil type, however, continue to be a problem.

A maximum probable earthquake magnitude of the San Andreas fault could be 8.3 on the Richter Scale. The true nature of the severe groundshaking produced by such an event is uncertain.

Many structures that were constructed in the City prior to both the 1933 and the 1971 seismic standards can be considered inadequate to withstand a seismic event of the predicted maximum intensity. Although, a study has been completed to identify these structures and an Unreinforced Masonry Building Mitigation Plan is under preparation, plans for the reinforcement or removal of such structures are as yet uncertain.

In the event of an earthquake areas within the City may subject to liquefaction. Liquefaction is a process whereby strong earthquake shaking causes sedimental layers that are saturated with groundwater to lose strength and behave as fluid. This subsurface process can lead to near-surface or surface ground failure that can lead to significant structural loss or property damage.

The fact that the hazards created by earthquakes are unavoidable makes it necessary to assign a certain level of risk to development within the study area. The level of risk which is chosen by the community will have an impact on the location, intensity, and type of land uses allowed to be established within the study area. The determination of what level of risk the community is willing to accept is the fundamental issue which will need to be decided as part of this General Plan Program.

In the event of a major earthquake, evacuation routes to and from the study area are expected to be severely disrupted due to potential physical road damage, flooding from the failure of the Seven Oaks Dam, and the subsidence of the roadbed. It is estimated that the Highland area could be isolated for 48 or more hours from outside help due to damage created by a major earthquake.

Slope Instability

Existing and future hillside grading as well as wildland fires may cause potential for erosion, slope instability, mudslides or landslides. Hillside grading and erosion control measures should be evaluated and addressed.

Public Health and Safety

Flooding

The location of the Seven Oaks Dam has the potential to cause severe flooding from dam failure due to the result of a severe earthquake.

The City of Highland is located within the Seven Oaks Dam inundation area and would be impacted from dam failure (Figure II-E-8). In addition, failure of the Big Bear Dam would impact portions of the East Highland Area, assuming the Dam was full (1972 Bear Valley Inundation Map). Once the Seven Oaks Dam is constructed, failure of the Big Bear Dam would not likely impact East Highland Area, unless the Seven Oaks Dam and Big Bear Lake Dam were full when the Big Bear Dam failed (as per phone conversation with Jerry Kopt, State Office of Emergency Service, Planning Division).

Flood protection is both a local and regional in nature. Drainage from adjacent development within and outside of the City may contribute to potential flood hazards if appropriate local and regional flood control measures are not properly planned and implemented.

Drainage improvements will be needed as outlined in San Bernardino County Flood Control District Comprehensive Storm Drain Plan No. 6, Zones 2 and 3.

Hazardous Materials

It is generally accepted that a certain amount of hazardous materials exist throughout the study area. The unauthorized storage, transportation and disposal of such materials within the community is an issue of much concern.

Small concentrations of household hazardous wastes are present throughout the General Plan study area. When hazardous household items become old or no longer have a value to the consumer, they are often discarded in the regular household trash. Disposal of these unidentified wastes into solid waste landfills which were designed to store only non-hazardous materials could have a serious detrimental effect to the health and safety of sanitation workers, landfill operator's and ultimately, the community.

The transportation of hazardous materials is regulated by the state and federal governments. Local agencies such as the City of Highland are preempted from developing local regulations for the transport of hazardous materials along designated state highways and railways which are inconsistent with State and federal regulations.

In addition to transportation issues, safety issues related to the storage and use of hazardous materials within the City's commercial and industrial areas can be expected.

The location and nature of toxic clean-up efforts upon closure of the Norton Air Force Base to rid the base of on-site hazardous wastes could impact surrounding land uses and potential base reuse projects. The City of Highland should carefully watch the California Environmental Protection Agency, Department of Toxic Substances Control's efforts to implement the Installation Restoration Plan for Norton AFB.

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The Norton Air Force Base Installation Restoration Plan calls for the transportation and disposal of hazardous materials at sites outside the base boundaries. It is the responsibility of the City of Highland to coordinate with the base closure efforts so as to stay informed as to the movement, off-site transportation, and disposal of hazardous materials.

Fire Hazards

Expanding development boundaries have resulted in extensive fire hazards in wildland/urban intermix areas. The hillside areas to the north of the City of Highland constitute a significant wildfire threat. Immediate emergency response to such potential hazards is critical to ensure the protection of residents within the General Plan study area. New development shall be consistent with the provisions of the Fire Safety Overlay District of the County of San Bernardino Code, as adopted by the City of Highland.

The area in the northeast portion of the City around East Highlands Ranch, and unincorporated portions within the eastern portion of the study area may constitute a potential wildland fire threat (Figure II-E-7).

Emergency Preparedness

A local emergency plan for the City of Highland should be prepared that outlines the procedures and available resources for response during and after an emergency caused by natural, man-made, or attack-related disasters. Such a plan should be coordinated with surrounding local and regional emergency planning efforts.

With a general increase in population, the potential for accidents requiring the need of specialized medical care will increase proportionately. Issues regarding the improvement of medical facilities and services must be addressed.

Crime Prevention

With the increase of crime in the area, there will be a greater need for crime prevention services and education programs for area residents.

The County of San Bernardino currently provides only one Community Service Officer to service the neighborhood watch program needs of the entire county.

Airport Land Use Compatibility and Safety

The change of Norton to a nonmilitary airport could greatly effect surrounding land use compatibility. If the Air Force Base is to be used as a non military airport in the future, existing AICUZ standards will likely be replaced by State Airport Planning guidelines. Although such a change in operations will reduce aircraft hazards in the area, land use compatibility as well as potential safety hazards to existing structures and uses are yet unclear.

Public Health and Safety

City of Highland involvement in the decisions made regarding the safety of uses proposed as part of the Norton AFB reuse is vital to ensuring the safety of City residents. Coordination between Federal, State, Regional and surrounding cities as well as the military will be necessary to ensure land use compatibility in the areas surrounding Norton Air Force Base.

Air Quality

Although it is understood that air quality issues are not confined by jurisdictional boundaries, the City of Highland's ability to make significant strides in improving the regional air quality is uncertain. The City has participated and endorsed, however, policies decisions reached as part of a regional air quality plan efforts should be made to ensure the incorporation of Highland's commitment to air quality while balancing the areas need to economic growth.

The study area includes two major sources of air contaminants; Norton Air Force Base and Santa Ana River Basin quarry operations. Norton AFB, although technically outside both the city limits and the General Plan study area, has had a profound effect on the City's southern edge. Along with being one of the areas major sources of air contaminants, the base also creates a variety of land use, noise, and visual impacts. It is anticipated, however, that many of these impacts including air emissions will change when the base is converted to civilian uses in early 1993. Whether the reuse of the base will entail the intensity of existing uses is not known. An EIR completed as part of a reuse plan indicates land use scenarios ranging from office and commercial uses to an international airport. Due to the uncertainty of future land uses for this facility, emission tables for the international airport have been attached, and the entire EIR for the reuse of the base incorporated as referenced.

In addition to Norton AFB, several active quarry operations exist in the Santa Ana River Basin and adjacent to the study area. These operations are major contributors of particulate emissions both within the study area and county region (see Table II-E-5). Current mining operations are summarized in the Open Space and Conservation Element of the General Plan. Since AQMD has not monitored air emissions for the Santa Ana River Basin, specific air emissions for the area do not exist. Impacts associated with minimum operations have been summarized in an EIR prepared for the Old Webster Quarry, P&D Technologies, 1988 within the Santa Ana River Basin. This report states "that sand and gravel operations have traditionally been associated with dust generation, creating localized dust nuisances near the facility. Improved control technologies developed by the SCAQMD, has led to a substantial reduction in emission levels. The major source of emissions from properly operating plants is, therefore, from scattered activities not amenable to control (called fugitive emissions)." Although these emissions have the potential of impacting the study area, Highland's jurisdictional responsibility does not cover current mining operations within the river basin. The City, therefore, has focused its emission reduction efforts on the regulation of truck trips which would be required to use local roadways.

The City of Highland traditionally has been a "bedroom" community, comprised primarily of residential uses with some support commercial. The balance of jobs available to the residents within the study area will be a significant issue regarding the maintenance of a jobs/housing balance in area for the purposes of improving regional air quality.

Additional homes, industries, and businesses will generate proportionally more stationary emissions, both locally by the additional use of fuels and materials such as paint, and regionally through increased electrical generation.

By far the largest increase in future emissions will result from increased vehicular trips and the resulting miles traveled by various types of vehicles.

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Table II-E-5
Air Quality Emissions from Airborne Particulates

Pollutant/ Standard	1985	1986	1987	1988	1989
Total Suspended Particulates					
24-HR $\geq 100\mu\text{g}/\text{m}^3$					
24-HR $> 260\mu\text{g}/\text{m}^3$	31/60	5/19	35/60	42/59	NA
Max. 24-HR Conc. ($\mu\text{g}/\text{m}^3$)	1/60	0/19	2/60	3/59	NA
	280.0	190.0	271.0*	486.0*	327.0
Particulate Sulfate					
24-HR $\geq 100\mu\text{g}/\text{m}^3$	0/60	0/19	0/60	0/59	0/59
Max. 24-HR Conc. ($\mu\text{g}/\text{m}^3$)	16.2	9.9	17.6	15.8	17.8
Particulate Lead					
1-MO $\geq 1.5 \mu\text{g}/\text{m}^3$	0/12	0/4	0/12*	0/12*	0.12
Max. 1-MO Conc. ($\mu\text{g}/\text{m}^3$)	0.19	0.10	0.23*	0.19*	0.09
Respirable Particulates					
24-HR $\geq 50 \mu\text{g}/\text{m}^3$	---	26/35*	36/61*	40/56*	44/59
24-HR $> 150 \mu\text{g}/\text{m}^3$	---	2/35	2/61	3/56	3/59
Max. 24-HR Conc. ($\mu\text{g}/\text{m}^3$)		285.0*	211.0*	289.0*	271.0

Source: Subsequent Environmental Impact Report Old Webster Quarry/Phunge Creek West Basin Sand and Gravel Mining and Processing Plan, City of Highland, July, 1990, South Coast Air Quality Management District - Redlands Air Monitoring Station Data Summaries, Supplemented by San Bernardino information shown by **

Concepts, Options, and Alternatives

Geologic and Seismic

In order to understand the public safety options available to the City of Highland in the event of an earthquake, a discussion of the potential impacts of earthquakes in terms of measurement, intensity and physical disruptions has been included in this section of the General Plan. This section focuses on the physical characteristics of earthquakes, and the associated concept of "determination of risk."

Earthquake Measurement

Two basic scales are used to measure earthquakes. The first is the Richter Scale, which objectively measures the magnitude (energy released) in an earthquake. The Richter Scale is a logarithmic scale where an increase of 1.0 on the scale represents an increase of 10 in the amplitude of the recorded wave, and an increase of about 32 in the energy release. Thus, a 6.0 magnitude earthquake releases 32 times as much energy as a 5.0 magnitude event.

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In comparison, the Modified Mercalli Scale subjectivity measures the effects of earthquake intensity at specific locations. Thus, while an earthquake will have one magnitude, it will have several intensities based on varying levels of damage in different areas. The Modified Mercalli Scale ranges from I, not felt except by a few under especially favorable circumstances, to XII, total damage waves seen on ground surfaces, lines of sight distorted, and objects thrown up into the air.

Analysis of earthquakes caused by the several faults in the study area and the region has defined these events in terms of magnitude. Earthquake magnitude expected from each of the major faults which could potentially have an effect on the General Plan study area are described in Table II-E-6. The description of magnitude along with other characteristics of seismic events help the community to establish an acceptable level of risk.

Table II-E-6
Regional Maximum Credible Earthquakes

Fault	Local magnitude
San Andreas	8.3
San Jacinto	7.5
Elsinore	7.5
Cucamonga	6.5

Ground Rupture

Ground rupture is the fracturing of the earth's surface. Ruptures causing a surface displacement in excess of an inch or two beneath a building, transportation facility, utility line, aqueduct, etc., can result in severe structural damage.

The region surrounding Highland is laced with faults. The potential for future activity on the San Andreas is readily apparent from the displacement of ground surface which indicates repeated faulting within the past 1,000 years. Other faults, not yet detected, could induce further damage, although the magnitude of the ground rupture is unlikely to exceed those already recognized.

The most significant seismic hazards in the Highland study area are the several active fault traces of the San Andreas fault zone (see Geology and Seismicity Issues Section, Figure II-E-3). To minimize damage within this area, the State of California adopted the Alquist-Priolo Special Zone Act of 1972. Under this Act, the State Geologist has mapped "Special Studies Zones" along the State's active and potentially active faults.

Prior to approval of structures for human occupancy within these special study zones, a geologic study must be undertaken to determine the precise location and necessary setbacks from identified faults to prevent the unnecessary structural collapse of buildings which might be located on or too near the fault line to be safe. Currently, no structures are allowed within 50 feet of an active fault. This represents a minimum statewide standard, however, local governments are encouraged to enact more restrictive policies for special use buildings and activities such as schools, hospitals, and emergency services.

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Ground Shaking

Ground shaking is the movement of the earth in response to a seismic event. The intensity of the ground shaking is a function of a magnitude of the earthquake, distance from the epicenter, and subsurface conditions. This hazard with lateral ground movement is the primary cause for the collapse of buildings.

There is little doubt that Highland will undergo strong seismic shaking in the future. Again the greatest concern in the planning area is the San Andreas. During a severe earthquake, high frequency shaking can be expected in areas of bedrock, such as the hills north of the City. Conversely, low frequency shaking can be expected in areas underlain by deep alluvium.

Ground Failure and Liquefaction

Ground failure is the inability of the earth to maintain strength. This hazard, which typically occurs because of ground shaking, is manifested as liquefaction, differential compaction, or subsidence. Liquefaction occurs when ground shaking forces water between particles of loose or medium dense soils, causing them to become fluid and liquify like quicksand. Differential compaction occurs when soils of different densities settle at varying rates, resulting in tilting or uneven land surfaces. Subsidence, like differential compaction, is the uneven local settlement of the surface, but is caused not by different soil properties but by withdrawal of fluid from the ground or by a seismic event.

Since portions of the City of Highland may be developed on soils which can be considered to have potential for subsidence due to liquefaction (Figure II-E-2). This concern will need to be considered on development approvals in these areas. As part of this consideration the City should require that site specific data in areas designated on the General Plan Geologic Hazards Map as potential for ground failure due to liquefaction or other hazards use the standards in Figure II-E-8 as a guide to the proper location of uses within this area.

Determination of Risk

The fact that the hazards created by earthquakes are unavoidable makes it necessary to assign a certain level of risk to development within the study area. The level of risk the City is willing to accept in response to ground rupture, groundshaking, and ground failure caused by earthquakes will ultimately have an impact on the location, intensity, and type of land uses allowed to be established within the study area. The determination of what level of risk the community is willing to accept is discussed in this section of the Health and Safety element of General Plan.

The level of risk associated with seismic hazards is indicated by the earthquake magnitude. The City of Highland defines magnitude categories for earthquakes as; Great Earthquake, those having a Richter magnitude above 8.0; Major Earthquake, Richter magnitude above 6.0; Moderate Earthquake, Richter magnitude 4.0 to 6.0; and Minor Earthquake, Richter magnitude below 4.0. Much the same as the risk from other natural hazards, such as flooding, the level of risk is defined by its individual potential degree of severity. For example, it is common practice to design flood-prevention works to accommodate flows which could be expected from a 100-year storm. Where a higher level of protection is desired, the design levels are increased to accommodate the flows which could be expected from storms occurring at roughly 300 to 500 year intervals.

**Figure II-E-8
Land Use Compatibility in Liquefaction Potential Zones**

Land Uses	Degree of Compatibility in Liquefaction Potential Zones		
	High Zone	Medium-High Zone	Medium Zone
Critical Nuclear related systems; major dams; explosives or hazardous materials manufacturing, handling, or storage; hospitals and other emergency medical facilities	Restricted	Restricted	Generally Unsuitable
Essential Police, fire and communications systems; Emergency Operations Centers (EOC's); electric power inter-tie systems; power plants; small dams; utility substations; sewage treatment plants; water-works; local gas and electric distribution lines; aqueducts; major pipelines; major highways, bridges and tunnels, ambulance services; public assembly sites with 300 or more capacity; schools	Restricted	Restricted	Generally Unsuitable
High Occupancy Multi-family residential of 20 or more units; major commercial including large shopping centers; office buildings; large hotels; health care clinics and convalescent homes; heavy industry; gas stations	Restricted	Generally Unsuitable	Provisionally Suitable
Normal-Low Risk Single-family and two-family residential; multi-family of less than 20 units; small scale commercial; small hotels, motels; light industry; warehousing	Restricted	Generally Unsuitable	Provisionally Suitable
Restricted Restricted unless alternative sites are not available or feasible and it is demonstrated through a site investigation that, although mitigation may be difficult, hazards will be adequately mitigated.			
Generally Unsuitable Restricted unless site investigation demonstrates that site is suitable or that hazards will be adequately mitigated.			
Provisionally Suitable Requires site investigation to confirm suitability; may require some modification of facility design or location.			

Source: San Bernardino County General Plan, Adopted July 1989.

In order to accommodate day-to-day planning decisionmaking, generally accepted levels of risk associated with seismic hazards must differentiate among man-made structures according to the potential loss of life, and the ability of critical municipal facilities to function after a major event. Hospitals and fire stations, for instance, are good examples of land uses essential to emergency response in the event of an earthquake, and therefore, would be expected to survive a maximum credible earthquake. Industrial warehouse uses would be considered low risk, however, since a limited number of persons would be expected to occupy such structures during a major quake. The City of Highland has defined these specific risk categories and the associated land use compatibility within the Special Studies Zone in Figure II-E-3.

Once risk determinations have been made, risk categories can be combined with magnitude to establish an acceptable level of risk to which all such structures will be designed (Table II-E-7). Combined with information on known local geologic features and soil types on a project by project basis, these risk categories can be used to ensure that all uses, including high risk facilities, are not subjected to undue seismic hazards.

Table II-E-7
Summary of Expected Earthquake Magnitude
and Associated Design Standards

Earthquake Magnitude Categories	Expected Magnitude	Standards for Development*
Minor	Less than 4.0	All structures should be designed to withstand ground shaking forces without damage.
Moderate	4.0 - 6.0	All structures should be designed to withstand ground shaking forces without structural damage.
Major	6.0 - 8.0	All structures should be designed to withstand ground shaking forces without collapse.

Source: Modified from San Bernardino County General Plan, Natural Hazards Section 1989.

- * Critical, essential and high occupancy structures shall be designed and constructed to remain standing and functional following a major earthquake and shall be so engineered as to withstand maximum probable ground motion accelerations.

**Figure II-E-9
Land Use Compatibility in Special Studies Zones**

Land Uses	Compatibility in Special Studies Zones or County Fault Hazard Zones
Critical Nuclear related systems; major dams; explosives or hazardous materials manufacturing, handling, or storage; hospitals and other emergency medical facilities	Restricted
Essential Police, fire and communications systems; Emergency Operations Centers (EOCs); electric power inter-tie systems; power plants; small dams; utility substations; sewage treatment plants; water-works; local gas and electric distribution lines; aqueducts; major pipelines; major highways, bridges and tunnels; ambulance services; public assembly sites with 300 or more capacity; schools	Restricted
High Occupancy Multi-family residential of 20 or more units; major commercial including large shopping centers; office buildings; large hotels; health care clinics and convalescent homes; heavy industry; gas stations	Generally Unsuitable
Normal-Low Risk Single-family and two-family residential; multi-family of less than 20 units; small scale commercial; small hotels; motels; light industry; warehousing; parks	Provisionally Suitable
Restricted Restricted unless alternative sites are not available or feasible and it is demonstrated through a site investigation that, although mitigation may be difficult, hazards will be adequately mitigated.	
Generally Unsuitable Restricted unless site investigation demonstrates that site is suitable or that hazards will be adequately mitigated.	
Provisionally Suitable Requires site investigation to confirm suitability; may require some modification of facility design or location.	

Source: San Bernardino County General Plan, 1989.

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Slope Instability

The Concept of general slope stability is determined by a number of factors including the angle of the slope, vegetative cover, wildfire, bedrock, soil, seismic activity, precipitation, and human alteration. Slopes may be in temporary equilibrium until one of the aforementioned factors is modified by natural or human activity resulting in an unstable condition and potential failure.

Natural Slopes and Open Space

Portions of northeastern Highland include areas that are characterized by foothills crossed by drainage channels created from the local mountain run-off to the north. Drainage from the north has cut deep into the surrounding landform creating steep walls susceptible to landslides (see Figure II-E-2). Traces of the San Andreas Fault zone add to the threat of landslides due to groundshaking.

High fire danger in the local mountain area may further add to the risk of landslide and mudslide. Slopes devoid of suitable vegetation after a natural fire event may not be able to maintain top soil in times of heavy precipitation (see also Wildland and Urban Fires section).

Reducing the risk associated with these natural slope instability hazards should be accomplished through the implementation of development guidelines sensitive to existing land conditions within the City. Documentation of areas to be avoided due to slope instability, land use compatibility matrices, and hillside grading guidelines for new development are concepts which should be explored as development encroaches on local hillsides (see Figure II-E-10).

Table II-E-8
Steps in the Development of
Slope Instability Development Guidelines.

Step I	
Hazard Identification and Avoidance	The development and maintenance of a detailed record of areas which are susceptible to slope instability or have experienced recent slope failures in an effort to avoid and/or correct problems prior to development. This would also include the development of a reference data base of all geotechnical and soil surveys completed as part of the development review process.
Step II	
Land Use Compatibility	Matrix showing the compatibility of Critical, Essential, High Occupancy, and Normal-Low Risk land use categories with identified hazard areas. This matrix would use the maps developed in the Hazard Identification portion of the guideline to indicate special studies and/or reports which may be necessary.
Step III	
Development Guidelines	Upon completion of necessary investigations as to the slope stability, and the completion of necessary reports and/or studies, guidelines which help integrate technical information into the design of new development can be used. These guidelines should include at the least; optional grading techniques, development phasing restrictions, erosion control measures, and revegetation standards.

Slope Instability and Development

New development within the City, even if unconstrained by natural topography, may present risk of slope instability due to landslide and erosion. These hazards are generally the result of insensitive development practices and could be avoided. Discussion of measures designed to reduce the risk of landslide and erosion impacts from new development in hillside areas can be found in the Land Use Element.

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All projects within the City of Highland located in identified hillside areas need to take into consideration the concept of "hillside design safety," which incorporates the suggestions outlined in both the Health and Safety Element and Land Use Element. This concept outlines the design elements which will need to be considered as part of the standard project review process for hillside development. Concepts include; grading and project phasing, fire protection, hillside vegetation management, erosion control measures, and flood control practices and techniques.

Slopes caused by mineral extraction activities will need to be monitored on all new mining operations to ensure that standards for reclamation are enforced.

Flooding

Alternative methods of flood control generally fall into three categories; maintenance of natural drainage patterns and flood plains, raising development above flood plain levels, and reduction of flooding through flood control improvements:

- *Preservation of Natural Drainage Areas:* Natural drainage channels made up of existing arroyos, creeks, washes and low lying flood plains which do not pose a threat to downstream urban development can be retained as natural areas and integrated into new open space networks designed to accept flows. Such areas can also be incorporated into local and regional recreation facilities. The major drawback of this alternative is the high cost of recovery and restoration after a major flood event.
- *Raising development above flood plain levels:* A typical technique used to mitigate flood damage in large flat areas, this technique can be used in cases where limited densities would not warrant the construction of an improved flood control channel or in which the land use type, such as industrial development, can be readily adapted to the floodplain constraints.
- *Flood Control Channels and Underground Improvements:* This technique can be used in areas where flood flows cannot otherwise be conveyed through an urban area. For this method to be implemented, a successive network of flood control facilities is necessary to move flood flows out of urban areas without harming downstream properties. This alternative is generally the most expensive in the short term, since improvements are permanent and intended to last a significant amount of time before being replaced. Costs for construction and maintenance can be amortized for a long period of time over large areas since the effect of the improvement is to potentially free up large areas for development. Flood control channels also allow more project design flexibility by rerouting drainage around new development.

Development within Floodplains - In general, the development of any use other than visual open space within floodplain areas may involve the absorption of a certain degree of public safety risk associated with unexpected flooding hazards. In anticipation of the use of floodplain areas within the City of Highland for other uses, the guidelines in Figure II-E-11 have been developed to address land use compatibility of general plan land uses within designated floodplain areas.

Figure II-E-10
Land Use Compatibility Guidelines in 100-Year Floodplains

Land Uses	Compatibility in 100-year Floodplains
Critical	
Nuclear related systems; explosives or hazardous materials manufacturing, handling, or storage; hospitals and other emergency medical facilities	Restricted
Essential	
Police, fire and communications systems; Emergency Operations Centers (EOC's); electric power inter-tie systems; power plants; utility substations; sewage treatment plants; water-works; local gas and electric distribution lines; aqueducts; major pipelines; major highways, bridges and tunnels; ambulance services; public assembly sites with 300 or more capacity; schools	Restricted
High Occupancy	
Multi-family residential of 20 or more units; major commercial including large shopping centers; office buildings; large hotels; health care clinics and convalescent homes; heavy industry; gas stations	Generally Incompatible
Normal-Low Risk	
Single-family and two-family residential; multi-family of less than 20 units; small scale commercial; small hotels; motels; light industry; warehousing; parks	Generally Incompatible
Restricted	
Restricted unless alternative sites are not available or feasible and it is demonstrated that, although mitigation may be difficult, hazards will be adequately mitigated.	
Generally Incompatible	
Restricted unless site investigation demonstrates that site is suitable or that hazards will be adequately mitigated	+

Source: San Bernardino County General Plan, Adopted 1989

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Hazardous Materials

As part of the City's General Plan effort, the City has incorporated applicable portions of the San Bernardino HWMP into this element in an effort to meet the following general objectives:

- the safe and responsible management of hazardous waste;
- the effective location of hazardous waste facilities that involves local and state governments, the public, and private industry; and
- the prevention of permanent hazardous waste disposal into the land or emission in the air without first processing the waste by an economically and technically feasible alternative technology.

Using the County's research establishing the regions waste generation levels, facility inventory and needs assessment, it is the City of Highland's intent to:

- participate in the setting of criteria for location new or expanded specified hazardous waste facilities within the region;
- consider methods, alternatives and options to manage small volumes of hazardous wastes produced by homes and small businesses within the City; and
- provide appropriate concepts and guidelines for the general management of hazardous wastes consistent with the County Hazardous Waste Management Plan.

The City of Highland recognizes its responsibility to provide information and develop guidelines for the management of hazardous waste within the City limits. However, not all necessary facilities for the processing, transportation, and disposing of hazardous materials may be physically located within the City boundaries. The City of Highland, therefore, recognizes the City's role in the participation in the regional management of hazardous wastes, their generation, transportation and disposal.

According to the San Bernardino County Hazardous Waste Management Plan, 41,000 tons of hazardous waste were exported from the County and about 9,000 tons of hazardous waste was imported to the County in 1986. The plan notes that there are no current estimates for the transportation of hazardous materials but that according to national estimates, the transportation of hazardous materials represents the majority of the material being transported. Since these hazardous materials become hazardous wastes when spilled or released into the environment, both the transportation of hazardous waste and hazardous materials is discussed in this section.

Federal and state agencies are responsible for the development and enforcement of the transportation regulations throughout the state. County and City agencies have the responsibility to develop transportation routes and restrictions for the transportation of hazardous waste/materials which are consistent with Federal and State laws. Figure II-E-11 outlines the role each jurisdiction has in the regulation of the transportation of hazardous waste/materials.

Figure II-E-11
Hierarchy of Responsibility for the Regulation
of Hazardous Waste/Materials Transportation

Agency	Responsibilities
FEDERAL	
Department of Transportation (DOT)	Establishes and enforces regulations for transportation of hazardous materials and wastes, including requirements for proper containment, marking, and placarding, as well as the need for shipping papers and reporting requirements.
Environmental Protection Agency (EPA)	Establishes and enforces regulations for transportation of hazardous materials and wastes in cooperation with DOT.
STATE	
State Department of Health Services (DHS)	Tracks the shipments of hazardous wastes in the State through the use of the federal Manifest system.
California Highway Patrol (CHP)	Enforces hazardous waste and materials regulations with regard to transportation. The CHP periodically inspects vehicles carrying hazardous materials and waste under the authority of the California Vehicle Code, Section 32001. The CHP inspect the packaging of hazardous substances, placarding on the vehicle, and the condition of the vehicle. In addition, the CHP Motor Carrier Specialist conduct annual inspections of transport vehicles to issue a certification as required by the DHS.

Figure II-E-11
Hierarchy of Responsibility for the Regulation
of Hazardous Waste/Materials Transportation

Agency	Responsibilities
LOCAL AGENCIES	
City of Highland	The City of Highland may institute a restriction by local ordinance to restrict or prohibit the transportation of hazardous wastes through the City if the ordinance meets the following conditions: The restricted highway is appreciably less safe than a reasonable alternative highway as determined by either: The use of the "Guidelines for Applying Criteria to Designate Routes for Transporting Hazardous Materials" prepared by the Federal Highway Administration, The California Highway Patrol or local jurisdiction determines the restricted highway is located within the watershed of a drinking water reservoir which meets certain requirements; The restriction is not preempted by federal law; The restriction does not eliminate access to pickup or delivery points, fuel, repairs, rest, or food facilities intended to accommodate commercial vehicles; Written concurrence has been obtained from surrounding jurisdictions; The highway is properly posted; and Notification is distributed to appropriate agencies and industry. Secondly, the City can establish notification requirements or restrict the hours of transport through the County by imposing curfews. Thirdly, the City can maintain the roads systems so as to reduce the risk of accidents and provide information to generators on transportation regulations so they may contract with reputable transportation companies. Lastly, the Local Fire Department is responsible for inspecting and permitting the use, storage, and handling of hazardous materials under Article 80 of the Uniform Fire Code.

Public Health and Safety

Siting of Specified Hazardous Waste Facilities

The focus of this section is to provide an explanation of the mechanisms adopted as part of the Health and Safety Element of the Highland General Plan to ensure that facilities which produce, treat, transport, or dispose of hazardous waste are located in environmentally appropriate sites.

Description of Specified Hazardous Waste Facilities

Specified hazardous waste facilities are defined by the California Health and Safety Code as offsite facilities that accept wastes from more than one generator. By law a waste is defined as hazardous if it poses a threat to human health or the environment when not handled properly. A facility must have carefully engineered and designed means for acceptance, storage, and treatment of the wastes as well as trained personnel operating the site. Specified hazardous waste facilities encompass a variety of different types and technologies. It is important to discuss the major types of facilities to provide a basis for the kinds of facilities that could be proposed within the City. The discussion below presents the basic types of specified hazardous waste facilities.

Transfer and Storage Facilities

Transfer and storage facilities collect small quantities of hazardous waste and store them until it is economical to transfer the wastes to a treatment or disposal site. These facilities have often been associated with small quantity generators. There are two different types of transfer and storage facilities. The first type collects like wastes from many small generators (such as waste oil, solvents, or dry cleaning materials). The wastes are brought to the facility in a facility-owned truck for temporary storage. The commingled wastes are later transferred to another facility for treatment. Operations of this nature located in Highland include Safety Kleen as well as several waste oil transporters. The second type of transfer and storage facility generally accepts wastes of any type whether solid or liquid, brought in either by the generator (if it is a small quantity) or by a licensed transporter, or by a facility-owned truck. While transfer and storage facilities are usually associated with small quantity generators, they can be used for large generators as well. Such facilities, although considerably larger, use a similar process for handling and storing wastes.

Treatment Facilities

According to a Department of Health Services publication, "Alternative Technology for Recycling and Treatment of Hazardous Waste," treatment facilities generally use one of the following processes:

- destruction or detoxification to transform a hazardous waste into a material safe for disposal;
- concentration or volume reduction to facilitate the safe handling and disposal of hazardous components; and
- immobilization to isolate the hazardous components from the environment.

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Treatment facilities alter the chemical form, toxicity, or volume of a waste. Because the treatment of waste does not conserve materials, it is the last choice process before disposal in the hazardous waste management hierarchy. Treatment facilities leave a hazardous waste residue which require disposal. These treatment facilities can be developed both onsite or offsite.

Transportable Treatment Units (TTUs) are temporary, mobile facilities that treat hazardous waste at the site of generation. They are becoming more popular because hazardous waste does not need to be transported long distances and most versions of treatment technologies are being developed as transportable units. In addition, most companies do not generate a sufficient amount of waste to warrant the expense of a permanent onsite facility and thus companies are beginning to recognize the advantage of TTUs. Although TTUs offer an alternative to the development of large treatment facilities, local governments must ensure these facilities are operated in the most environmentally sound manner and that precautions are taken to ensure protection of environmental resources. Therefore, standards for the use, review, and approval of these facilities are necessary.

Incineration is used for some wastes such as organic liquids and solids which cannot be reclaimed economically or are technically difficult to treat. Incinerations destroy the waste, leaving a small hazardous waste residue. They can be developed as onsite or offsite facilities and are often used in hospitals to burn infectious wastes. Like the TTUs, mobile incineration units are being proposed and may be more widely used in the future. Local governments must, however, ensure that facilities are placed in the most environmentally sound locations.

The cement kiln incinerator has received favorable evaluations because hazardous waste can be used as a secondary fuel in the production of cement. Where coal or fuel oil is used as the primary fuel, the use of hazardous waste as a secondary fuel may offer the potential to provide a net beneficial impact to air quality. Kilns have the capacity to destroy large amounts of wastes as well as recover substantial amounts of energy from certain solvents and waste oils. One such incinerator is currently operating in Lebec, California. It uses solvents from the painting, printing, and petrochemical industries as supplemental fuel. A study done in New York State regarding the use of cement kilns found that existing cement kilns could be modified at a relatively low cost to accept hazardous waste fuels. There are cement kilns operating in the County of San Bernardino which should be encouraged to use alternative sources of energy, if a beneficial impact to air quality can be demonstrated.

Solidification and stabilization are the two most common methods of immobilization. Solidification/stabilization involves changing a liquid to a solid or altering the characteristics of a solid to immobilize the contaminants. A variety of materials are used including cement, lime, and polymeric materials. This method is used for wastes that cannot be recycled, treated, or destroyed. Often, waste undergo several treatment methods; solidification or stabilization is usually the last method applied in a treatment train.

Recycling Facilities

Recycling involves the reclaiming, use, and reuse of wastes. A waste can be recycled onsite or offsite. For onsite facilities the waste is processed and then reused or used for other purposes. Offsite facilities would involve transporting the waste to a facility for processing and then returning it to the generator or selling it on the open market. Recycling is a preferred waste processing method in the hazardous waste management hierarchy because it reduces the amount of hazardous waste as well as conserves materials.

Public Health and Safety

Residuals Repository and Land Disposal Methods

Existing hazardous waste legislation refers to residuals repositories as a disposal method for future management of wastes. AB 2948 (Chapter 1504, Statutes of 1986) has as one of its goals that "... as an alternative to traditional land disposal methods, residuals repositories be utilized for the byproducts of preferred hazardous waste treatment technologies." A residuals repository is defined in state law (SB 2093, Chapter 1417, Statutes of 1988) as a specified hazardous waste facility which accepts only treated hazardous waste, meets all applicable federal and state and regulations, and holds a hazardous waste facility permit. A residuals repository would provide for the disposal of residual material remaining from treatment of hazardous waste, meets all applicable federal and state regulations, and holds a hazardous waste facility permit. A residuals repository would provide for the disposal of residual material remaining from treatment of hazardous waste. While the definition of a residuals repository specifies that only treated waste would be accepted, certain waste such as contaminated soils may also be disposed of at a residuals repository. Contaminated soils with hydrocarbons are temporarily exempt from the landfill ban on disposal of untreated hazardous waste established by the Hazardous and Solid Waste Amendment of 1984.

In addition, state law requires the State Department of Health Services (DHS) to develop standards for residuals repositories. The standards include the types of wastes acceptable for disposal at a residuals repository, standards for the design and construction of the facility, standards for the operation, monitoring, maintenance, closure, and post-closure of residuals repositories, standards for the location of the facility and subsurface geology, and requirements for hazardous waste segregation and record keeping.

Since disposal facilities, other than repositories, may be proposed in the City, these other types of facilities must also be included in the discussion of siting specified hazardous waste facilities. Identifying, only the residuals repository method eliminates facilities like landfills, deep-well injection, and land spreading. To address this group of facilities, the state definition of land disposal method is also used. The California Code of Regulations (CCR), Title 22, defines land disposal method as the disposal, storage, or treatment of hazardous wastes on or into the lands, including, but not limited to, landfill, surface impoundment, waste piles, deep-well injection, land spreading, and co-burial with municipal garbage.

The definition of a land disposal method encompasses several different technologies for managing wastes. The term land disposal method is used in this plan along with the residuals repository concept because together they address the different types of land disposal options. When the term land disposal facilities, is used, it refers to land disposal method and residual repository collectively.

Facility Land Area Requirements

The land area requirements for the different specified hazardous waste facilities vary significantly based on the size and type of the proposed facility. For instance, a land disposal facility would require large amounts of land and, thus, would be more appropriate to site in remote or less populated areas. The State DHS has estimated the land area requirements for different facilities. While the actual sizes and necessary land areas vary significantly, the estimates provide a good basis for comparing the different facilities.

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Whereas a land disposal facility (using estimates for the residuals repository) may require anywhere from 50 to 300 acres of land, a treatment facility could require anywhere from 3 to 30 acres of land. It is evident from these estimates that a land disposal facility could be located in rural or desert lands because of the need for larger land areas, if applicable environmental concerns were addressed.

Siting of specified hazardous waste facilities in any area must include consideration of buffer zones. The amount of truck traffic would be an important consideration in siting a facility. For example, a small treatment facility could generate 12 to 14 trucks per week whereas a large facility could generate a significantly higher amount of truck traffic, around 120 to 300 truck trips per week. Thus, proposed transportation routes must accommodate anticipated truck traffic. In addition, aesthetic issues must be addressed since most of these facilities could have visual impacts as well as air quality concerns since facilities have the potential to generate air emissions.

Local Siting Process to Comply with the Tanner Act

Development of specified hazardous waste facilities requires permits from state and local agencies. The State Department of Health Services is responsible for issuing hazardous waste facility permits and for ensuring that operating conditions imposed on the approval of a facility are met. The City of Highland has the responsibilities to see that a facility is located in areas with compatible land uses, to ensure that conditions of approval on land use permits are implemented and carried out for the duration of the project and the respond to hazardous material/waste emergencies where appropriate. At the local level, both discretionary and ministerial land use permits would be required.

The following discussion looks at the three major issues involves in the local siting of specified hazardous waste facilities:

- the need for specific land use designations addressing specified hazardous waste facilities,
- the development of siting criteria, and
- the application review process.

Land Use Designation for Hazardous Waste Facilities

Project proposals may only be located with a site approval (Conditional Use Permit) in areas zoned with a specified hazardous waste facility overlay which applies to the project site and corresponding buffer. An overlay zone applies an additional level of regulation since the applicant must comply with both the base district (zone) and overlay zone requirements. The overlay zone, however, provides more detail than the base zone on the applicable land use review requirements, compatible land uses, and any special permit procedures which are unique to specified hazardous waste facilities. The use of the overlay ensure that any future proposed land use within the overlay are compatible with the hazardous waste facility. The overlay is not assigned to any particular location on the zoning maps until approval for a specified hazardous waste facility has been granted, hence the term floating overlay. Although the overlay zone is not given a specific location, the overlay is described in the City of Highland Development Code.

Public Health and Safety

Site Criteria

State law requires that the Hazardous Waste Management Plan, although not adopted by the City include siting criteria and designate general areas where the criteria might apply. The General Plan Appendix contains a Hazardous Waste Siting Criteria Checklist for the review of hazardous waste facility applications within the City of Highland. When used along with General Plan policies, this criteria will help in the determination of the suitability of a site for a specified hazardous waste facility proposals being considered by the County.

The siting criteria and checklist also applies to Transportable Treatment Units (TTUs) as defined by the Department of Health Services. Since TTUs are mobile and may be in operation near residential areas, the applicability of the siting criteria will be determined on a case by case basis for such uses.

**Table II-E-9
Maps Used for Evaluation Siting Criteria**

Alquist - Priolo Special Studies Zone

Endangered Species Habitat

Norton Air Force Base

National Forest Areas

Transportation Routes

Application

Review Process

State law identifies a formal administrative process for the local review of facility applications. The process provides for notification of affected agencies and the public of a pending application, procedures for the initial review and consideration of an application, participation by the interested public through the local assessment committee, and a procedure for consideration of appeals on a local decision made on a particular facility application. All applications for hazardous waste facilities must be in conformance with applicable procedures, standards and regulations as specified in the Highland Municipal Code.

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Household Hazardous Waste

One way that the City of Highland can make a significant difference in reducing the amount of hazardous waste it generates is to investigate and implement programs designed around source reduction, public and private collection programs, and a comprehensive public education program. Alternatives for implementation for consideration are presented to give the City flexibility in designing appropriate implementation measures. The following alternatives outline these alternative methods by which reduction, collection and education can be used to curb the indiscriminate discarding of hazardous household wastes.

Private Sector Source Reduction/ Collection Programs

The goal of this alternative is to address household hazardous waste at the point-of-sale of the original product, rather than handle it as a disposal problem later. The City, in concert with private sector retailers, would elicit business assistance in creating and promoting practical, waste-saving alternatives to their customers. The overriding concept in this alternative is to keep these materials from entering the waste stream, thus reducing eventual public collection and disposal costs.

Retailers would be given the option of how they wish to participate, by offering customers one or a combination of the following programs:

- Substitution of environmentally sound alternatives for potential Household Hazardous Waste (HHW) products. Examples include biodegradable cleaners; substitutes for chlorinated hydrocarbon solvents, such as caustic soda based paint strippers in place of methylene chloride based ones; rechargeable batteries in place of disposable ones; etc.
- Education as to proper disposal or treatment of potential HHW that can be done in the home. Examples of materials that would respond to this would include water based glue; photographic chemicals; cleaners; etc.
- An in-store or cooperative privately funded collection program that would be made available and promoted to customers for the purpose of recycling, or properly disposing of potential HHW materials. Examples of this would include used paint collection; privately operated motor oil collection; plastic shopping bag collection, styrofoam packing material collection; etc.

Public Collection Programs

The major goal of these alternatives is to provide convenient access to City or City/County sponsored disposal programs which can accept a majority of household hazardous wastes.

Public Health and Safety

Periodic Household Waste Roundups

The City would contract with a hazardous materials disposal vendor to conduct a HHW roundup. Some advantages of this type of program are the ease of implementation and ability to accommodate change, along with the lack of institutional barriers. Roundups are commonplace in many cities, and the permitting process necessary to conduct a roundup is very familiar to State and local agencies. The primary disadvantage with this program is that roundups generally occur once or twice a year. Such a schedule would not mitigate the day-to-day disposal needs of the study area.

Permanent Drop-off Site(s)

The City would site and construct a permanent HHW collection and processing facility. The primary advantage of this alternative is its ongoing availability, unlike other programs which are only available on an infrequent basis. It could, therefore, be very effective in dealing with the HHW from the immediately surrounding community, but perhaps little better than no facility at all for residents in the more distant parts of the study area.

In terms of dealing with the hazards associated with HHW, a permanent regularly staffed facility would have the advantages of a carefully controlled environment within which to properly handle and dispose of HHW. Residents would be shielded from inadvertent exposure, and facility personnel would be guaranteed access to emergency equipment.

The primary disadvantages come from the problems associated with siting and permitting this type of facility, i.e., implementing the program. Any site selected is likely to be opposed by the immediately surrounding businesses and residents. Furthermore, a permanent facility would not be very adaptable to change.

Mobile Collection Facility

The City would purchase and staff a mobile collection unit that would consist of a custom made trailer, equipped with an office, a laboratory, and waste packaging and storage areas. It would be moved to pre-scheduled locations, collecting and disposing of HHW for a specified period of time.

The primary advantage of this system is its flexibility. With no permanent location, the unit is free to be utilized anywhere in the City, thereby accommodating future growth. The permitting process is not expected to create any insurmountable problems, nor would local opposition to siting be expected to develop.

The primary disadvantage of this system is the high potential cost of operation and location problems due to siting criteria.

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Door-to-Door Collection

The City would create and staff a program where City residents could call and schedule a pickup of HHW. A special collection appointment system would be established, vehicles purchased, and special training given to collection personnel. Although this program rates high on effectiveness and consciousness raising, it can be prohibitively expensive.

Curbside Collection Program

This alternative would have all household hazardous waste left at the curbside to be collected along with weekly trash recyclable. The obvious advantage is convenience for residents. This alternative can be the most effective in terms of dealing with the household hazardous waste problem. Disadvantages due to the cost could make this program infeasible.

Public Education and Information

Education of the public concerning the use and disposal of household hazardous wastes is a vital part of any of the above listed programs. The promotion of non-wasteful purchasing habits, and the use of non-hazardous substitutes for potentially hazardous products, along with programs designed to educate the public in the environmental and health problems caused by improper disposal practices, is key to a successful waste management program.

Students should be informed as early in their education as possible so they can develop proper habits in relation to the use of chemicals. Development of educational materials such as textbooks, coloring pamphlets, curriculum units, and contest/awards programs are just a few examples of early education programs the City can investigate.

Educational and public information programs designed with adults in mind might include; City and County Hotlines for waste emergencies and pick-up; flyers, newspaper articles, pamphlets and brochures; and radio and television public service announcements.

Transportation

Hazardous wastes and materials are transported daily into and through the City. Generally, the transportation of these substances goes unnoticed until an unforeseen accident calls attention to the hazard. The purpose of this section is to discuss the available methods by which the City of Highland can monitor and control the transportation of hazardous material/waste in and through the City.

Public Health and Safety

Fire Hazards and Prevention

As development continues to encroach on adjacent National Forest hillsides, the threat of fire caused by this urban/wildland land use mix increases. Apart from the obvious detrimental effects of wildland fires in the northern portion of the City, secondary impacts include fires created from airborne ash, allocation of urban fire services to outlying urban fringe areas, and the potential blockage of transportation and emergency evacuation routes (Emergency evacuation is also discussed in the Emergency Services and Facilities section of this element).

In order to contain the threat of wildland fire, the City is responsible to maintain a certain level of safety based on the implementation of the following related concepts.

Joint Use of Emergency Facilities and Services

The City of Highland currently uses the services of the San Bernardino County Forestry and Fire Warden Department and the California Department of Forestry and Fire Protection through the San Bernardino County, Community Service Area No. 38 (CSA38). Additional fire services are provided by the U.S. Forest Service in the adjacent National Forest areas. These agencies constitute a sharing of resources best suited to do the job.

Preventative Vegetation Management Programs

As a method to reduce the risk of wildland fires in both urban and wildland areas, vegetation management programs should be implemented. Typical methods used to manage vegetation in hillside areas include:

- *Watershed Management* - The hillsides in the northeast portion of the City contain areas of native vegetative cover. The main objective in watershed management in these areas is to maintain vigorous multi-aged stands of vegetation which can respond favorably to periodic disturbance by fire.
- *Vegetation Management* - This concept includes the modification of the size, arraignment, and kind of vegetative fuels in order to reduce the ignition potential, flame length, and heat output of a fire. Typical methods of vegetation management include reduction of fuel load through brush clearance, control burns, and reseeding of developed or disturbed hillsides.

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Hillside Fire Safety Development Design Guidelines

One method to ensure that new development is designed to provide a high degree of fire safety is to design such concepts into new projects before they are actually constructed. To accomplish this, review procedures must take into consideration the relationship that the new development will have with the potential fire hazard conditions of each individual site. Major concepts to be addressed in this effort are the Fire Topography and Building Design issues discussed below:

Fire Topography - In the design of hillside development the relationship of between topography and fire behavior should be a factor in the design of the development. Homes located in narrow canyons and saddles, for example, are especially fire-prone because of the existence of "natural chimneys" in these areas where winds are funneled into these canyons and eddies. Studies have also shown the homes located where a canyon meets a ridge are more likely to burn than other ridge-top homes. Homes located on narrow ridges without adequate setback are often lost to fire because flames and convection heat hit the homes directly.

Building Design - Building density and design are important safety considerations because a burning home can ignite adjacent homes. The roof is the vulnerable part of a home because it is exposed to airborne sparks. Studies of structural losses during wildfire in Southern California have shown that with 1000 feet of brush clearance, a home with a wooden roof has a 21 times greater chance of burning than a home with a nonwood roof.

Exterior materials used on wildland homes should have a fire-resistance rating of 1 to 2 hours, meaning that they should consist of materials such as stucco, metal siding, brick, concrete block, and rock. This is especially critical for parts of a home exposed to winds from the north or east, or that are positioned at the top of a slope.

Reduced overhangs or boxed eaves also protect a house from ignition and heat or flame entrapment. Under-eave vents should be located near the roofline rather than near the wall. Exterior attic and underfloor vents should not face possible fire corridors and should be covered with screen (not to exceed 1/4 inch mesh). Picture windows and sliding glass doors should be made only of thick, tempered safety glass and protected with fire resistive shutters. Stone walls can act as heat shields and deflect the flames of an approaching fire. Swimming pools, decks and patios can be used to create a setback safety zone as well as to provide additional safety to a structure.

In addition, Fire Safety Overlay Standards include planning, design, access, water supply, roofing materials, building setbacks, construction standards, and full modification zones.

Public Awareness and Educational Programs

The City of Highland has the opportunity to keep the public informed of the available information concerning fire hazards and fire prevention. In developing such programs, the City should take advantage of existing programs currently being implemented by outside agencies. Figure II-E-12 summarizes some of the existing programs now being offered by several agencies within the study area.

Figure II-E-12
Existing Fire Prevention and Emergency Services

Agency/Organization	Existing Program
California Department of Forestry and Fire Prevention	Public School Presentations (usually 1st and 2nd grades) Fire Inspection Programs Fire Station Open House Civic Group Presentations Brush Removal Equipment Seminars Team Teaching Programs Smoke Detector Classes Public Relation Services at Local Events Disaster Relief CPR Classes
U.S. Forest Service	Smokey the Bear Programs Classroom Presentations Public Relations and Information Services
American Red Cross	Disaster Relief Disaster Relief Training Aid to Families of Fire Aid to Fire Victims First Aid and CPR Training Infant CPR Training Earthquake Preparedness

Emergency Preparedness

In order that City services can respond to all emergencies, it is necessary to develop methods which, in the event of a major catastrophe, will put in motion the specific essential personnel and services which can deal with any eventuality. The following concepts describe the steps which the City of Highland will need to take in order to be prepared for natural or technological disaster.

Emergency Operations Plan

This plan details the City of Highland response to emergency situations associated with natural disaster, and technological incidents. The Plan also describes efforts which maintain a certain level of preparedness through implementation of emergency planning; training of full-time, auxiliary and reserve emergency personnel; public awareness and education programs; and mitigation measures which can reduce losses from disasters, including the development and enforcement of land use, design and building regulations. Generally such plans are broken down into the following three basic components:

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- Part One includes the basic plan, and provides overall organizational and operational concepts for responding to various types of identified hazards that may impact the City.
- Part Two includes a functional description of the emergency response organization. This section is supported by Appendices in the Plan that provide Emergency Action Checklists for hazard specific responses.
- Part Three contains operational data such as a listing of resources, key personnel, essential facilities (lodging, feeding, fallout shelters, etc.), along with contacts and other data needed for conducting emergency operations.

In the event of a major catastrophe within the City, the Emergency Operations Plan answers questions regarding what emergency agency, group or organization should be activated. Since all major emergency facilities within the City and outlying areas are active in the development of the plan, time spent on critical decisions during an emergency is reduced significantly and more time can be spent on reducing losses.

Mutual Aid Agreements

Another important concept used in emergency preparedness programs is the development of agreements with State and surrounding local jurisdictions which foster cooperation of emergency services in the event of a major disaster. In the early 1950s, the California Disaster and Civil Defense Master Mutual Aid Agreement was adopted by all counties and incorporated cities within the State of California. This agreement created a formal structure from which cities and counties could coordinate emergency response services with state agencies when it is determined that local resources prove to be inadequate to cope with a given situation.

In addition to State mutual aid agreements, the City must coordinate with County emergency response agencies. The City's Emergency Operations Plan should detail the responsibility and agreements reached with the California Department of Forestry, and other regional agencies which either play a direct or supportive role in disaster management programs.

Crime Prevention

One method of crime prevention is to incorporate safety into the design of new construction. This concept is commonly known as "design for defensible space." Example design elements which can be used to achieve a safer more defensible project include the following:

- *Residential*
 - Easily visible streets and street names, entrances, and house numbers.
 - Avoidance of flag lots.
 - Well-lighted and visible stairs in apartment projects.
 - Limitation of access into and between buildings to reduce escape routes and the potential for undetected entry.

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- A visually well-defined separation between public and private spaces.
- Placement of windows and landscaping to facilitate surveillance of yards, corridors, entrances, parking areas, streets, and other public and semi-public spaces.
- Landscaping which permits surveillance and limits places for concealment.
- Maximize the use of cul-de-sacs and minimize the number of through streets as a means of facilitating surveillance by neighbors.
- Require the installation of automatic garage door openers in new development.
- *Business*
 - Landscaping, location of buildings and walls which facilitates surveillance from the street and neighboring properties, and which limits places for concealment.
 - Provision of easy access for emergency vehicles.
 - Limited access to buildings or building groups.
 - Elimination of exterior access to roofs by features such as flag poles.
 - Easily visible street names and addresses.
 - Limitation of promotional window signs which restrict views to interiors of storefronts.
- *Recreation Areas*
 - Adequate night lighting.
 - Design which facilitates surveillance from streets and nearby buildings.
 - Location of park buildings and high use activity areas near streets.

Airport Safety

Unlike the development of a typical employment center, the potential continuation of airport operations as part of the reuse of the NAFB will include a measured risk to the residents of the community. In order to determine the potential risks to both land use and Highland residents, a discussion of the existing and potential public safety impacts have been included.

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Military Air Base Impacts

Since most of the City of Highland and surrounding communities have developed around the existing air force base, the safety of air operations have been well documented and land uses in areas which are the most likely areas for accidents to occur, have been adjusted to conform to military regulations. These areas referred to as Accident Potential Zones (APZs) are derived from Department of Defense studies of historical accident data of military airports. Each military airport has these accident potential zones and the number and dimensions vary according to the category of aircraft using the airport. These zones are categorized as follows:

- *Clear Zone:* The clear zone lies immediately beyond the end of the runway and extends outward along the extended runway centerline for a distance of 3,000 feet. This distance was chosen because it represents the area within which two-thirds of all accidents occur. A clear zone is applied to each active runway.
- *Accident Potential Zone I:* APZ I is a rectangular area beyond the clear zone which possesses a significant potential for accidents. Typically, this zone is 3,000 feet wide by 5,000 feet long, and is shaped to conform to the shape of the flight paths, since accidents occur more frequently on approaches than departures. The Air Force has recommended significant limitations on the types of allowable land uses and their intensity as a means of reducing concentrations of people within this area.
- *Accident Potential Zone II:* APZ II is a rectangular area that extends beyond APZ I that still has a measurable potential for accidents. APZ II is normally designated under a flight path whenever APZ I is required. Dimensions of these zones are usually 3,000 feet wide by 7,000 feet long. If APZ I is not required, then APZ II is not normally required since there is much less chance of a serious accident (as evidenced by having Zone I). However, it may be required without a corresponding Zone I if an analysis of accidents and operations indicates the need for this zone. APZ II may be modified to represent the actual curve of a flight path. When APZ II is warranted, it is most often applied to approach paths.

NAFB Reuse

As plans for the reuse of the Norton Air Force Base are finalized, so too is the risk associated with the potential of continuing aircraft operations in the future. Since general aviation airports, and even specialized civilian aircraft retrofit and/or repair operations have different safety precautions and respond to a different regulatory agency as does the military, the City of Highland has the opportunity to participate in the redesignation of land use within overflight areas (see Figure II-E-13). Unfortunately, at the writing of this document, alternatives for the reuse of the Air Force Base include both airport and non-airport plans. In order to provide information which may be useful in assessing the impact of potential civilian airport operations after military use of the base facilities has finished, the following discussion regarding nonmilitary airport operations has been included in this section of the General Plan.

Additional information concerning the Norton Air Force Base reuse alternatives and their potential impacts to the City is located in the Land Use Element of the General Plan.

Public Health and Safety

Unfortunately, unlike other hazards which affect the City, the likelihood of an aircraft accident can not be precisely measured. According to the National Transportation Safety Board (NTSB), the largest number of accidents involving fatalities for aircraft accidents occur on airport property. Fewer accidents occur in the surrounding area, with an equal number occurring within one mile and between one and five miles from the airport. In response to the hazards associated with airports the Federal Aviation Administration provides regulation of airports and aircraft operations. This regulation extends outside the specific airport boundary both in the generalized airspace above the City and at the approach and takeoff portions of the runways. These areas are referred to as Part 77 Imaginary Surfaces and Air Safety Zones.

Federal Aviation Regulations Part 77, which address "Objects Affecting Navigable Airspace," establishes various imaginary surfaces, including approach surfaces, for determining when the heights of objects or structures may present a safety problem for aircraft using an airport. In practice, no physical structures are allowed to penetrate these surfaces, both for aircraft safety and radar operation. These surfaces slope upward from the runway at various angles, depending on the type of aircraft using the airport and airport weather capability (Division of Aeronautics 1983).

In addition to sloping imaginary surfaces, rectangular inner and outer safety zones are also used to denote critical takeoff and landing corridors. When these zones are specified, the length of the inner zones is usually equal to a quarter of the length of the clear zone, or whichever is longer. The total length of the safety zone varies between 2,000 and 5,000 feet, depending on the type of aircraft. These distances are derived from where the aircraft crosses the end of the runway to where the plane touches down, and rolls to a stop.

As is shown in Figure II-E-13, the redesignation of the NAFB to a general aviation type of facility will remove most land use overflight restrictions now in place adjacent to the east end of the runway. According to the Draft Environmental Impact Statement for the Disposal and Reuse of Norton Air Force Base, the continuation of aircraft operations as proposed in the reuse plan will vastly diminish impacts to the surrounding land uses in both overflight and noise hazards. In addition, the aircraft clear zone overlaid on the east end of the runway will be entirely within the base boundaries and not impact land within the City.

Further discussion on the effects that the removal of the military APZ restrictions will have on underlying land uses is included in the Land Use Element.

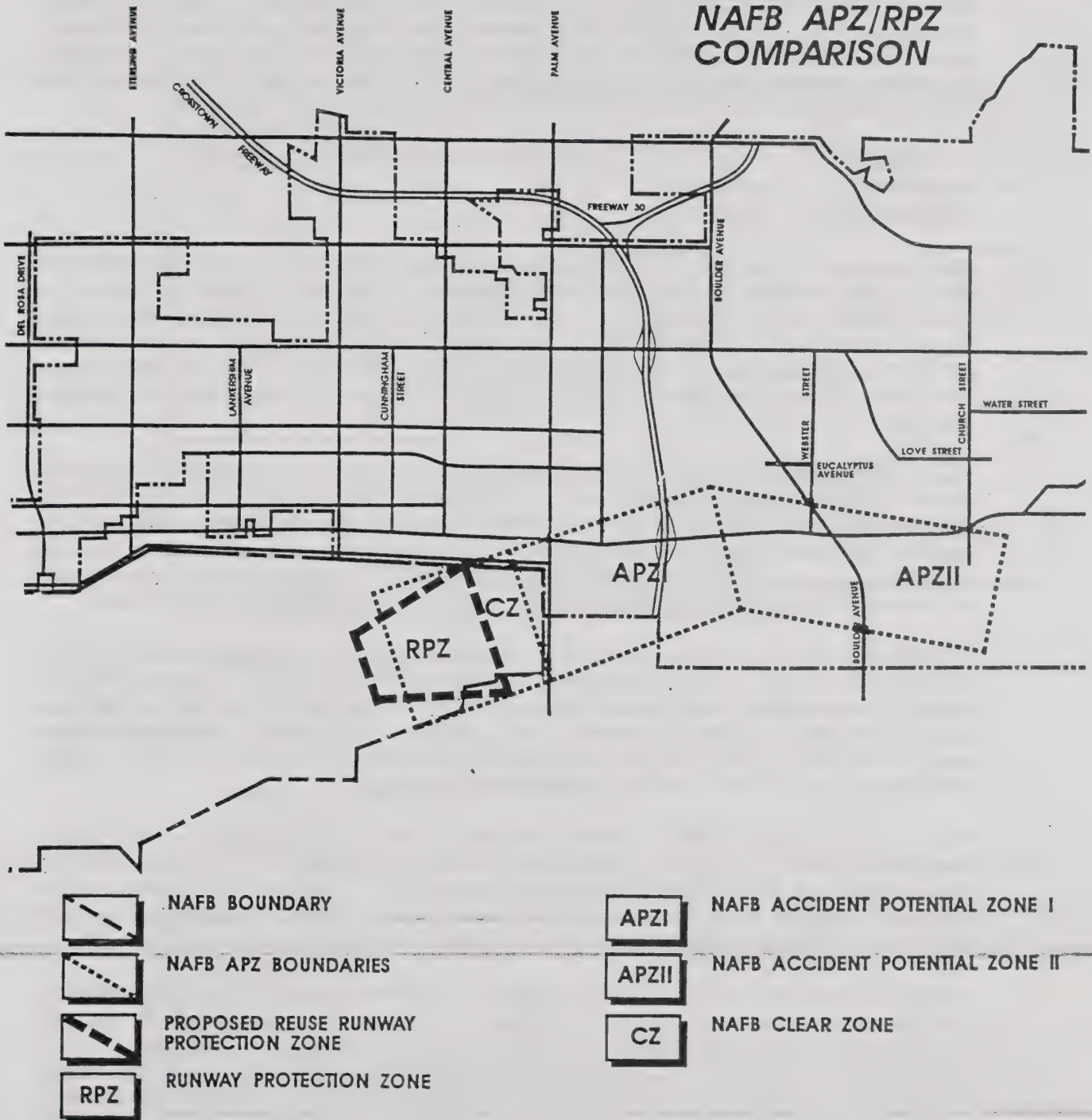
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CITY OF HIGHLAND
GENERAL PLAN

CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



FIGURE II-E-13
NAFB APZ/RPZ
COMPARISON



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Public Health and Safety

Air Quality

To understand the City of Highland's air quality role, a discussion regarding the regulatory framework established to reduce source emissions which effect local and regional air quality has been included. This section focuses on the regulatory framework which has been established to achieve set standards to air quality in the region. This section also includes the incorporation of efforts made through the adoption of the Regional Air Quality Plan for San Bernardino County. Additional information regarding local air quality data has been included as part of the General Plan Environmental Impact Report.

Air Quality Regulatory Framework

The Clean Air Act, promulgated in 1970 and amended twice thereafter (including the recent 1990 amendment), establishes the framework for modern air pollution control. The Act directs the Environmental Protection Agency (EPA) to establish ambient air standards for six pollutants: Ozone, Carbon Monoxide, Lead, Nitrogen Dioxide, Particulate Matter and Sulphur Dioxide. The standards (NAAQS) are divided into primary and secondary standards; the former are set to protect human health within an adequate margin of safety and the latter to protect environmental values such as plant and animal life.

According to the Act, states are required to submit a State Implementation Plans (SIP) for areas that exceed the NAAQS, or nonattainment areas. The SIP, which is reviewed and approved by the EPA, must demonstrate how the federal standards will be achieved. Failure to submit a plan or secure approval could lead to denial of federal funding and permits for such improvements as highway construction and sewage treatment plants. In case where the SIP is submitted but fails to demonstrate achievement of the standards, the EPA is directed to prepare a Federal Implementation Plan.

In addition to the six pollutants regulated by federal legislation, the California Clean Air Act establishes standards for Hydrogen Sulphide, Sulphates and Vinyl Chloride. Responsibility for achieving these standards (which are more stringent than federal standards) is placed on the California Air Resources Board and local air pollution control districts. District plans for nonattainment areas must be designed to achieve a five percent annual reduction in emissions. The Air Quality Management Plan (AQMP) is, in turn, incorporated into the SIP.

With the aim of complying with all federal standards by 2007, the South Air Coast Air Quality Management District (SCAQMD) and Southern California Association of Governments (SCAG) jointly prepared the 1989 Air Quality Management Plan (AQMP). The Plan calls for implementation of rules and regulations by the Air Resources Board, the South Coast Air Quality Management District, the Environmental Protection Agency and Local Jurisdictions.

The AQMP calls upon local governments to achieve an 8 percent reduction regionwide in emissions from reactive organic gases and oxides of nitrogen. Specifically, local governments are asked to implement appropriate control measures contained in the AQMP to achieve this reduction. Several measures direct local government to adopt an Air Quality Element or its equivalent into this General Plan. If all of the applicable control measures are not implemented, the air quality standards cannot be achieved. In this event, the existing moratorium on location of stationary sources in the basin will continue and federal funding and other permits may be denied until the standards are met.

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In an effort to comply with federal and state regulations, and to improve air quality in the county and region, this Air Quality Element has been adopted.

Agency responsibility in the implementation of air quality measures are summarized in Figure II-E-14.

Figure II-E-14
Agency Responsibilities in Air Quality Planning

Agency	Level of Government	Enabling Legislation	Responsibilities
EPA	Federal	Clean Air Act ¹	Established NAAQS. Approves SIP. Levies sanctions against nonattainment areas.
ARB	State	Federal Clean Air California Clean Air Act ²	Prepares and submits SIP to EPA. Reviews regional plans to ensure every reasonable TCM action is taken to achieve standards at earliest practicable date. ³ Emission standards for mobile sources.
SCAG	Local	Federal Clean Air Act California Clean Air Act	Submits annual progress report to EPA and ARB. Responsible for transportation and land use measures. ⁴
SCAQMD	Local	California Clean Air Act	Adopt, implement, and enforce transportation control measures. ⁵ Regulate stationary sources. Review indirect sources.
City/County	Local	Local Ordinances and other requirements.	Implement land use and transportation control measures.

Source: San Bernardino County Regional Air Quality Implementation Plan, 1991.

¹ Amended in November 1990.

² AB 2595 Sher Act, 1988.

³ Health and Safety Code, Section 41503.5.

⁴ Health and Safety Code, Section 40717 (b)-(b-f).

⁵ Health and Safety Code, Section 40716-17.

Regional Air Quality Plan for San Bernardino County

Showing commitment in the attainment of regional air quality, the City of Highland participated in a cooperative effort with the San Bernardino Associated Governments (SANBAG), the Southern California Association of Governments (SCAG), and the South Coast Air Quality Management District (SCAQMD) in the adoption of the Regional Air Quality Plan. The intent of this plan is to provide the information necessary to adopt and implement an air quality plan in San Bernardino

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County and its fifteen cities. It includes a Model Air Quality Element with goals and policies that the participating cities agreed through consensus would become part of each jurisdiction's general plan. It also includes a menu of actions from which each may choose to incorporate into local implementation plans. The AQMP identifies the stationary and mobile source control measures to be implemented to ensure emission reductions, agency responsibility for the control measures, and the cost effectiveness of each measure. Control methods are categorized into three tiers, depending on their readiness for implementation. The three tiers are:

- *Tier I:* A program to aggressively implement known technologies within the existing regulatory framework (with adoption and implementation within the next few years).
- *Tier II:* Significant advancement of today's technological applications and regulatory intervention where needed to force the development of new products and eliminate future emissions growth. (with adoption and implementation within the next ten to fifteen years).
- *Tier III:* Measures require the development of major new technology and substantial investment in infrastructure (with adoption and implementation within the next twenty years).

The following principles were used in the preparation of Highland's Air Quality goals, objectives, and strategies:

- *Air Quality and Economic Growth:* Achieve air quality improvements in such a way that continued economic growth can be sustained.
- *Market Incentives and Regulations:* Achieve necessary air quality related life style and economic changes through market incentives where feasible and through regulatory measures where necessary.

Local Air Quality Measures

In choosing goals, objectives and strategies for the Highland General Plan, the City used the following principles from the San Bernardino County Air Quality Management Plan as a basis:

- *Air Quality and Economic Growth:* Achieve air quality improvements in such a way that continued economic growth can be sustained.
- *Market Incentives and Regulations:* Achieve necessary air quality related life style and economic changes through market incentives where feasible and through regulatory measures where necessary.

Due to the unique format of the Highland General Plan, an air quality control measure matrix was included in Table II-E-10 of the Public Health and Safety Element in order to direct readers to relevant sections of the General Plan where air quality issues were taken into consideration. This table was based on SCAG's Handbook for the Preparation of Air Quality Elements, 1989. More importantly, Table II-E-10 provides a breakdown of the generalized areas included in the City's approach to improving air quality which is consistent with both SCAG and AQMD guidelines. This table is also consistent with the model Air Quality Implementation Plan (AQIP) as presented in the Regional AQMP (although the Highland General Plan version is presented in a slightly different format) and addresses each of the AQIP topics. The following table provides a comparison of policies in the General Plan and the Regional AQMP.

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Air Quality and General Plan Consistency

Several elements of the Highland general plan include goals, objectives, and strategies that are intended to promote the attainment of air quality goals and provide a policy framework for implementation of the San Bernardino Regional Air Quality Management Plan. The role of the Air Quality Section of the Highland General Plan is to identify how the goal of attaining clean air has influenced general plan policy and to establish the potential for air quality benefits that might be realized through the implementation of these policies.

Deterrents to the uses of the single-occupant automobile as a primary means of transportation is a critical link among the elements of the general plan. Increased automobile emissions, whether as a result of population growth or increased use, equates to a degradation in air quality. The Circulation Element addresses the efficiency of the automobile transportation network and describes policies to promote the development and use of alternate modes of transportation. The Land Use Element addresses the spatial framework of the community which determines transportation needs. This element also describes community design parameters which refine this spatial framework and incorporate design elements that discourage automobile use and encourage alternative transportation modes.

As an overall comparison of Highland General Plan and Regional AQMP policies are included in Figure II-E-10.

Table II-E-10
General Plan and Regional AQMP Policy Comparison Matrix

San Bernardino Air Quality Management Plan suggested policy statement.	Consistency with Highland General Plan	Comments
REGIONAL AIR QUALITY PLAN		
Principles	Consistent	The Highland General Plan incorporates these principles as part of the Air Quality section of the Health and Safety Element.
Topic 1: Government Organization, Roles and Responsibilities		
1. Establish Coordinated Approach	Consistent	Consistent based on the City's participation in the Regional AQMP
2. Integrate With Related Program	Consistent	Ongoing implementation through CEQA, SCAG, and AQMD review and regulations.
3. Affect Source Jurisdictions	Consistent	Consistent based on the City's participation in the Regional AQMP
4. Encourage Community Participation	Consistent	Consistent based on the City's participation in the Regional AQMP
5. Support Innovative Programs	Consistent	Included in the Air Quality Section of the Health and Safety Element
Topic 2: Ground Transportation		
<i>Subtopic 1: Auto Use</i>		
1. Eliminate Vehicle Miles	Consistent	Included in the Air Quality Section of the Health and Safety Element, and the Circulation Element
2. Reduce Vehicle Miles Traveled	Consistent	Included in the Air Quality Section of the Health and Safety Element, and the Circulation Element
<i>Subtopic 2: Congestion Management</i>		
Modify Work Hours	Consistent	Included in the Air Quality Section of the Health and Safety Element
Establish HOV Lanes	Not Applicable	Policy is regulated at the regional level
Integrate Congestion Management Planning	Consistent	Ongoing program when adopted by the County.

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Table II-E-10
General Plan and Regional AQMP Policy Comparison Matrix

San Bernardino Air Quality Management Plan suggested policy statement.	Consistency with Highland General Plan	Comments
<i>Subtopic 5: Parking Management</i>		
Manage Parking Supply	Consistent	Included in the Air Quality Section of the Health and Safety Element
Encourage Market Incentives/Disincentives	Consistent	Included in the Air Quality Section of the Health and Safety Element
<i>Subtopic 6: Cleaner Fuels</i>		
Support Legislation	Consistent	Included in the Air Quality Section of the Health and Safety Element
Institute Clean Fuel Systems	Consistent	Included in the Air Quality Section of the Health and Safety Element
<i>Topic 3: Air Transportation</i>		
Promote Improved Technology	Not Applicable	Relevant strictly to airport operations which are outside City's jurisdiction.
Promote Centralized Ground Power	Not Applicable	Relevant strictly to airport operations which are outside City's jurisdiction.
Promote Improved Ground Access	Not Applicable	Relevant strictly to airport operations which are outside City's jurisdiction.
<i>Topic 4: Land Use</i>		
Manage Growth	Consistent	Inherent in all policies in the General Plan.
Balance Growth	Consistent	Included in the Land Use Element of the General Plan.
Protect Sensitive Receptors	Consistent	Included in the Air Quality Section of the Health and Safety Element
Integrated Planning Process	Consistent	Included in the Air Quality Section of the Health and Safety Element
<i>Topic 5: Particulate Emissions</i>		
Control Dust	Consistent	Included in the Air Quality Section of the Health and Safety Element, Circulation Element, and the Open Space and Conservation Element.
Reduce Emissions from Building Material/Methods	Consistent	Included in the Air Quality Section of the Health and Safety Element

Table II-E-10
General Plan and Regional AQMP Policy Comparison Matrix

San Bernardino Air Quality Management Plan suggested policy statement.	Consistency with Highland General Plan	Comments
<i>Topic 6: Energy Conservation</i>		
Energy Conservation	Consistent	Included in the Air Quality Section of the Health and Safety Element, and the Open Space and Conservation Element.
Limit Water Heater Emissions	Consistent	Included in the Air Quality Section of the Health and Safety Element.
Recycle Wastes	Consistent	Included in the Public Services and Facilities Element.

Source: Planning Network, 1992.

Land Use Element

The Land Use Element specifies land uses which are compatible with state and federal mandates for the attainment of air quality goals. The element focuses on strategies for growth that emphasize efficiency in providing urban services and promote a reduction in automobile use. The policies, intended to guide the future growth and development in Highland, describe the composition and intensity of land use, locational criteria, and the timing of development.

Included in the Land Use Element are requirements and incentives for mixed use development and increasing the intensity of land use near transit lines. The intent is to offer mass transit as a transportation alternative to a greater number of Highland residents than would occur under more dispersed land use patterns. Community design is also conducive to alternative forms of transit, such as bicycling and walking. This is accomplished through the arrangement of buildings, parking lots, paths, and open space to create an environment that deemphasizes automobile travel and offers incentives to use transit alternatives. This particularly aimed at reducing high emission, short convenience trips during the work day.

The relationship between jobs and housing is strengthened through policies that support a mix of land uses. "Mixed use" development is defined as an integration of residential land uses with public, commercial, and office space. Its purpose is to bring the places where people live, work, and shop closer together, thereby reducing the need for vehicular travel. In all of these cases, the thrust is to make lifestyle choices available to people to reinforce other measures aimed at reducing auto travel.

The Land Use Element provides a model checklist for the assessment General Plan consistency. Projects can be evaluated on the basis of their comparative degree of conformity to the goals, objectives and strategies which include air quality. The evaluation of a project's impact on air quality will be further enhanced through the City's CEQA review process.

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Circulation Element

A primary objective of the Circulation Element is the attainment of air quality goals. This is accomplished through policies that promote the use of mass transit or other transportation alternatives while discouraging single-occupant vehicular use to the extent feasible. In this manner, both a major cause of the air quality problem and potential solutions are simultaneously addressed.

Transportation alternatives that reduce air pollution are encouraged in the concepts portion of the Circulation Element. Mass transit increases the efficiency of transportation by increasing the number of people that are transported by a single "vehicle". The result is a reduction in the per capita energy consumption which translates to a reduction in air pollutant emissions. The use of the bicycle and walking as means of transportation reduces emissions to an even greater extent. The element establishes policies to promote these transportation alternatives as well as mass transit.

Air Quality Control Measures

The City of Highland plays an active role in regional efforts to improve air quality through the implementation of the Tier I Control Measures outlined in the Air Quality Management Plan for local jurisdictions within the Regional Air Quality Implementation Plan. The Highland General Plan integrates these measures which, when implemented by all cities within the basin, will fulfill the City's role in the reduction of the mobile and stationary source emissions and ultimately improve regional air quality.

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Figure II-E-15
Highland General Plan
Air Quality Control Measures

AQMP Issue	Highland General Plan Element	Implementation Measure	Comments
TRANSPORTATION			
Trip Reduction	Circulation	1.3.3, 1.3.6, 1.4.2, 1.6.1, 2.2.2	The concept of Trip Reduction is discussed in the Concepts, Options and Alternatives Section of the Circulation Element. The full range of Transportation Demand Management options are outlined in this section.
	Public Health and Safety	3.2.1, 3.2.2, 3.2.3, 3.3.1, 3.3.2, 3.3.6,	
Peak-Period Truck Travel	Circulation	1.5.7	Highland's current lack of industrial land use makes limits on truck travel infeasible. As land uses proposed on the General Plan Land Use Map build out, however, the City may want to revisit the issue through an ordinance update.
	Public Health and Safety	3.6.1	
Traffic Flow Improvements	Circulation	1.1.2, 1.1.3, 1.1.5, 1.1.7, 1.1.8, 1.1.12, 1.5.6, 2.2.2	The Highland Circulation Element includes discussion regarding potential Transportation Systems Management options in the Concepts, Options, and Alternatives section of the Circulation Element.
	Public Health and Safety	3.4.3, 3.4.4, 3.4.5, 3.6.8,	
Clean Fuels in Fleet Vehicles	Public Health and Safety	3.1.4,	Since the City is newly incorporated, the opportunities to implement these policies are vast. The economic impacts to the City, however are unclear and will need to be further studied to ensure that services provided are the most efficient, economically as well as environmentally feasible possible.

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Figure II-E-15
Highland General Plan
Air Quality Control Measures

AQMP Issue	Highland General Plan Element	Implementation Measure	Comments
LAND USE			
Growth Management	Land Use	1.2.7.c, 1.2.8.c, 1.3.3, 1.6.2, 1.7.1, 2.4.1, 2.4.2	In addition to the strategies mentioned, the Highland General Plan sets about a revised pattern of land use which incorporated the issues of the AQMP.
	Circulation	1.1.3, 1.1.4, 1.3.4, 1.4.2, 1.4.3, 1.4.7, 1.5.4, 1.5.6	
	Public Health and Safety	3.3.3, 3.3.1, 3.4.2, 3.4.4, 3.4.6	
	Housing	1.1.1, 1.1.2, 1.1.3, 1.1.8, 1.1.10, 2.1.1, 2.2.1, 2.3.1, 2.3.2, 2.3.3, 2.3.5, 2.3.6, 2.3.7, 3.3.1, 3.1.2, 3.2.1, 3.2.3, 3.2.4.	
Sensitive Receptors	Public Health and Safety	3.5.1, 3.5.2,	The Public Health and Safety Element provides specific strategies for the protection of sensitive receptors.
PARTICULATE AND BUILDING EMISSIONS			
Roads, Parking lots, and Construction of Roads and Buildings	Public Health and Safety	3.6.1, 3.6.2, 3.7.1, 3.7.2, 3.7.3,	The Public Health and Safety Element provides for the limitation of fugitive particulate from construction related activities.
Agriculture	Public Health and Safety	3.6.1	The Public Health and Safety Element provides for the limitation of fugitive particulate from construction related activities.

Public Health and Safety

Figure II-E-15
Highland General Plan
Air Quality Control Measures

AQMP Issue	Highland General Plan Element	Implementation Measure	Comments
Building Materials and Methods	Public Health and Safety	3.1.4, 3.1.7,	The City of Highland continually encourages the use of energy saving materials, construction practices, and building methods for new and remodel construction. This is emphasized in the Public Health and Safety Element.
Local Government, Residential and Commercial Energy Conservation	Public Health and Safety	3.1.3, 3.1.4, 3.1.7	The City of Highland continually encourages the use of new energy saving technologies in new construction, and in City buildings and services. This is emphasized in the Public Health and Safety Element.
Waste Recycling	Public Services and Facilities	1.1.18	Highland has instituted a number of programs to reduce the amount of waste tipped at local landfills. The Highland General Plan provides policies for the further reduction of waste generated per the requirements of AB 939.
GOVERNMENT ORGANIZATION			
Coordination of Plans and Programs	Land Use	3.3.1, 3.1.2, 3.1.3, 3.2.1, 3.2.2, 3.2.3, 3.2.4,	Because the City of Highland shares an uneven boundary with the City of San Bernardino, the City actively encourages ongoing intergovernmental communications in order to ensure a logical transition in city services and appropriate protection of the environment.

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Figure II-E-15
Highland General Plan
Air Quality Control Measures

AQMP Issue	Highland General Plan Element	Implementation Measure	Comments
Intergovernmental Coordination	Public Health and Safety	3.1.2, 3.5.1, 3.7.1,	Because the City of Highland shares an uneven boundary with the City of San Bernardino, the City actively encourages ongoing intergovernmental communications in order to ensure a logical transition in city services and appropriate protection of the environment.

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 1: Create a secure public environment which minimizes potential loss of life and property damage, as well as social, economic, and environmental disruption resulting from natural and man-made disasters.					
Objective 1.1: Eliminate the potential for loss of life and minimize physical injury and property damage from seismic groundshaking and other geologic events.					
1.1.1	Ensure that new development including facilities, which will be required for provision of emergency services following a seismic or geologic event, are designed to meet the design standards located in Table II-E-6 of the Concepts, Options and Alternatives section of the Public Safety Element.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget, Development Fees, Redevelopment Funds for rehabilitation funds
1.1.2	Apply the Land Use Compatibility Chart for Special Studies Zones when reviewing all discretionary and ministerial actions, Figure II-E-8.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget, Development Fees
1.1.3	Require as a part of development review that reports are prepared pursuant to State law within the Alquist-Priolo Special Study Zones.	Ongoing	Existing Program	Community Development, Public Works	Department Budget, Development Fees
1.1.4	Implement a program for upgrading seismically hazardous (unreinforced masonry) buildings within the City of Highland pursuant to the provisions of SB 547.	Implement program 8 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget, Development Fees
1.1.5	Require that all development within the Alquist-Priolo Special Studies Zones be subject to discretionary review by the Planning Commission and/or the City Council.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.1.6	Review Building and Zoning Codes to incorporate specific standards for siting, seismic design, and review of Critical, Essential, High Occupancy, and Normal-Low Risk structures.	Review as part of zoning code update - Ongoing	New Program	Community Development	Department Budget

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
1.1.7 Along with San Bernardino County, the State of California, and other agencies as appropriate, undertake a review of existing Critical and Emergency structures for any significant siting, design, or construction problems that would make them vulnerable in an earthquake. Incorporate findings of the review into emergency operations plans, and address long-term programs for facility upgrading or relocation.	Review as part of update of City Emergency Operations Plan - update annually	New Program	Community Development	Department Budget
1.1.8 Direct the Building and Safety Division to continually monitor new building materials used for earthquake stability and fire resistance and incorporate such materials into plan check comments when applicable.	Annual plan adoption then - Ongoing	New Program	Community Development, City Council	Department Budget
1.1.9 Incorporate the components outlined in Figure II-E-9 as part of a comprehensive hillside development guideline to address development issues identified slope instability areas within the City.	Incorporate and adopt as hillside guidelines 10 months post General Plan adoption	New Program	Community Development	Department Budget
1.1.10 Require development within slope areas which potentially have soils or underlying formations that might produce severe building constraints to have engineering studies performed in order to determine an appropriate structural design and incorporate such design into the project.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget, Development Fees
1.1.11 As part of the development review process, require site-specific analysis of soils and other conditions which might effect the severity of onsite impacts from maximum credible seismic and geologic events.	Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget, Development Fees

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Objective 1.2: Eliminate the potential for loss of life, and minimize physical injury, property damage, public health hazards, and nuisances from the effects of a 100-year storm and associated flooding.					
1.2.1	In reviewing proposals for new development or intensification of existing development, ensure that structures designed for human occupancy are protected from flooding in the event of a 100-year storm to a point one foot (instability') above the ground floor level, and that access will be available in the event of such a storm.	Ongoing	Existing Program	Public Works	Department Budget, Development Fees
1.2.2	Apply the Land Use Compatibility Guidelines in 100-year Floodplains Chart when reviewing all discretionary and ministerial actions, Figure II-E-10.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
1.2.3	As a prerequisite to new development or the intensification of existing development, ensure that a drainage study has been completed by a qualified engineer, certifying that the proposed development will be adequately protected, and that implementation of the development proposal will not create new downstream flood hazards.	Ongoing	Existing Program	Community Development, Public Works	Department Budget, Development Fees
1.2.4	Work with San Bernardino County to require that all development in the city and its sphere of influence comply with discharge permit requirements established by the Regional Water Quality Control Board.	Ongoing	Existing Program	Community Development, Public Works	Department Budget, Development Fees
Objective 1.3: Protect life and property from the potential detrimental effects (short and long term) of the transportation, storage, treatment, and disposal of hazardous materials and wastes in the City.					
1.3.1	Work with the County Health Department, Fire Department, and California Department of Health Services, to ensure compliance with existing State and local laws and regulations.	Ongoing	Existing Program	Community Development, Public Works, General Government Services	Department Budget
1.3.2	Provide information to the public regarding laws and regulations addressing the transportation, storage, treatment, and disposal of hazardous materials and wastes.	Ongoing	New Program	Community Development, Public Works, Fire and Police Departments	Department Budget
1.3.3	Pursue establishment of a regular city-wide program of household hazardous waste collection.	Ongoing	Enhancement of Existing Program	Public Works, Fire Department	Department Budget

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding	
Objective 1.4: <i>Ensure that property in, and adjacent to, wildland areas are reasonably protected from wildland fire hazards without degrading the viability of natural ecosystems.</i>					
1.4.1	Where development is proposed within areas potentially subject to wildland fire hazards, ensure that the Fire Department has reviewed the proposal in terms of its vulnerability to fire hazard and its potential as a source of fire. Ensure that Fire Department re-commendations regarding mitigation of fire hazard risks are incorporated into the project.	Ongoing	Enhancement of Existing Program	Community Development, Fire Department	Department Budget, Development Fees
1.4.2	Ensure that new development, and intensification of existing development, in areas subject to wildland fire is adequately protected in a manner which balances the need for implementing fire prevention measures, with the need for preserving significant biological resources. Prioritize this balance as follows: • Protection of existing developed areas and areas currently approved for development. • Preservation of significant biological resources. • Approval of new development or intensification of existing development.	Ongoing	Enhancement of Existing Program	Community Development, Fire Department	Department Budget, Development Fees
1.4.3	Incorporate the concepts discussed in the Fire Hazards portion of the Concepts, Options and Alternative section of the Public Health and Safety Element into the development of Hillside Fire Safety and Development Guidelines which give direction to new development designers in an effort to prevent inherent fire hazard design flaws in new hillside projects.	Ongoing	Enhancement of Existing Program	Community Development, Fire Department	Department Budget, Development Fees
1.4.4	Disseminate public information regarding the prevention of both urban and wildland fires and methods to protect dwellings subject to such fire hazards.	Ongoing	Enhancement of Existing Program	Fire Department	Department Budget
1.4.5	Work with the County Fire Department to develop a Fire Protection Master Plan identifying fire hazards and risks, optimize cost effectiveness, and insures present and future fire protection needs.	Ongoing	New Program	Community Development, Fire Department	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.4.6	Work with the County Fire Department in providing a basic First Aid and Cardio-Pulmonary Resuscitation Training to residents of the City on a scheduled basis.	Ongoing	New Program	Community Development/Fire Department	Department Budget
1.4.7	Work with the County Fire Department in developing appropriate Fire Safety and Building Safety Standards in the development code for the wildland interface and intermix areas.	Ongoing	New Program	Community Development, Building and Safety, Fire Department	Department Budget
1.4.8	Work with the County Fire Department developing Public Fire Prevention Education and Fire Hazard Abatement.	Ongoing	New Program	Community Development, Fire Department	Department Budget
1.4.9	Implement the Fire Sprinkler ordinance for all newly constructed buildings.	Ongoing	Existing Program	Community Development, Building and Safety and Fire Department	Department Budget/Developer Fee
1.4.10	In cooperation with the County Fire Department, and East Valley Water District, ensure that new development meets the emergency water service standards.	Ongoing	Existing Program	Community Development, County Fire Department, EVWD	Department Budget, Applicable Agency Budget, Development Fees
Objective 1.5: Minimize the risk and fear of crime through physical planning strategies that will maximize surveillance opportunities and minimize opportunities for crimes, by creating a high level of public awareness and support for crime prevention.					
1.5.1	As part of the Development Review Process, require that proposals for new development and for the intensification of existing development are reviewed by the Police Department prior to approval.	Ongoing	Enhancement of Existing Program	Community Development, Police Department	Department Budget
1.5.2	Promote the establishment of neighborhood watch and business watch programs to encourage community participation in the patrol of neighborhood and business areas, and to facilitate increased awareness of suspicious activities.	Ongoing	Enhancement of Existing Program	Police Department	Department Budget
1.5.3	Establish minimum lighting standards for urban residential and non-residential uses to facilitate night time surveillance and to foster a sense of security for residents, workers, and patrons.	Ongoing	New Program	Community Development, Police Department	Department Budget

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
Residential: • Easily visible streets and street names, entrances, and house numbers. • Avoidance of flag lots. • Well-lighted and visible stairs in apartment projects. • Limitation of access into and between buildings to reduce escape routes and the potential for undetected entry. • A visually well-defined separation between public and private spaces. • Placement of windows and landscaping to facilitate surveillance of yards, corridors, entrances, parking areas, streets, and other public and semi-public spaces. • Landscaping which permits surveillance and limits places for concealment. • Maximize the use of cul-de-sacs and minimize the number of through streets as a means of facilitating surveillance by neighbors. Business • Landscaping, location of buildings and walls which facilitates surveillance from the street and neighboring properties, and which limits places for concealment. • Provision of easy access for emergency vehicles. • Limited access to buildings or building groups. • Elimination of exterior access to roofs by features such as flag poles. • Easily visible street names and addresses.				

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	Recreation Areas - Adequate night lighting. - Design which facilitates surveillance from streets and nearby buildings. - Location of park buildings and high use activity areas near streets.				
Objective 1.6: Ensure compatibility between land uses in the City of Highland and air operations from Norton Air Force Base, by limiting the type and intensity of development within identified aircraft accident potential zones to that appropriate to the risk of accident occurrence.					
1.6.1	Review individual development proposals in the vicinity of Norton Air Force Base for compliance with Federal Aviation Regulations (FAR) Part 77 height limitations.	Ongoing	Existing Program	Community Development, Public Works	Department Budget, Development Fees
1.6.2	Review individual development proposals in the vicinity of Norton Air Force Base for compliance with the Airport Land Use Planning Handbook, from the Division of Aeronautics.	Ongoing	Existing Program	Community Development, Public Works	Department Budget, Development Fees
Objective 1.7: Ensure that adequate public notification regarding aircraft activities is provided to new residents in areas subject to aircraft overflights.					
1.7.1	As a condition of approval for new residential development (including construction of single family residences on existing lots) where aircraft over flights are probable, require that aviation easements be gained prior to occupancy.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.7.2	Require letters of advisement incorporating information in CCRS or DRE while report where projects occur within the projected 65 CNEL and the designated overflight area.	Ongoing	New Program	Community Development	Department Budget, Development Fees
Goal 2: Maintain effective emergency preparedness and response programs.					
Objective 2.1: Coordinate with the City's public service agencies, the County and other neighboring jurisdictions in developing a regional system to respond to daily emergencies and major catastrophes.					
2.1.1	Establish and maintain an integrated emergency management plan, including a list of all local resources for equipment, material, specialized assistance, etc.	Initiate plan and provide as necessary updates.	Enhancement of Existing Program	Community Development, Fire Department, Police Department	Department Budget

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
2.1.2	Support area wide mutual aid agreements and communication links with San Bernardino County authorities and other participating jurisdictions.	Ongoing	Existing Program	Police Department, Fire Department	Department Budget
2.1.3	Establish a working relationship with local amateur radio clubs sufficient to secure their voluntary participation in disaster recovery efforts.	Ongoing	New Program	Police Department, Fire Department	Department Budget
2.1.4	Disseminate public information regarding actions which residents and businesses should take to minimize damage in a natural disaster, as well as actions which would be taken to facilitate recovery from a natural disaster.	Ongoing	New Program	Police Department, Fire Department	Department Budget
Goal 3: A reduction in mobile and stationary source air pollutant emissions through cooperation and endorsement of the San Bernardino Regional Air Quality Plan; reductions in the amount of vehicular travel; promoting efficient land use patterns; maximizing ride sharing, the use of public transit, and other transportation management techniques; reducing local energy consumption; and other feasible techniques which achieve the following principles: • Achievement of significant air quality improvements in such a way that continued economic growth can be sustained. • Achievement of necessary air quality related lifestyle and economic changes through market incentives where feasible and through regulatory measures where necessary.					
Objective 3.1: Support new approaches, techniques and methods which improve the local and regional air quality.					
3.1.1	Support Federal, State, and County legislation which is consistent with Highland's Air Quality Goals, Objectives, and Strategies.	Ongoing	New Program	Community Development	Department Budget
3.1.2	Cooperate with San Bernardino County and surrounding counties within the air basin in efforts to establish regional solutions to air quality problems through the implementation of the San Bernardino County Regional Air Quality Plan.	Ongoing	New Program	Community Development	Department Budget
3.1.3	Create and integrate innovative local emissions reducing pilot programs into city plans for future government facilities and equipment.	Ongoing	New Program	Community Development	Department Budget

Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
3.1.4	Support the development and use of alternative fuel sources for transportation related activities (i.e., city vehicles, buildings) to reduce local government energy demand.	Ongoing	New Program	Community Development	Department Budget
3.1.5	Participate in the establishment of public private partnerships for the provision of innovative public and private transportation services and systems where the enhancement of the local and regional air quality is a major goal.	Ongoing	New Program	Community Development	Department Budget
3.1.6	Cooperate with regional transit agencies in the continued development of diverse and efficiently operated transportation systems which generate the minimum feasible pollutants.	Ongoing	New Program	Community Development	Department Budget
3.1.7	Develop incentive programs which recognize and reward developments that use new and innovative emission reduction techniques such as: • Introduction of innovative efficient window glazing, wall insulation, and ventilation systems. • Introduction of efficient air conditioning, heating, and appliances. • Incorporation of passive solar design, and solar heating systems. • Innovative use of energy cogeneration and/or use of waste energy. • Landscape techniques which reduce water consumption and provide passive solar benefits.	Provide informational handouts to the public and implement awards/incentive program 24 months post General Plan adoption	New Program	Community Development, General City Services	Department Budget, private utility incentives, CDBG funds as available
Objective 3.2: Use incentives, regulations and transportation demand management techniques in an effort to reduce the number of vehicle trips made within the study area.					
3.2.1	Develop programs to implement transportation demand management programs such as: • Implementing employee ride share and transit incentives in public agencies. • Requiring employee ride share and transit incentives for employers with more than 25 employees at a single location.	Develop overall framework for implementation 8 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget, Transportation Grants and funds as available

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	- Working with private agencies in the implementation of teleconferencing and telecommuting with employers with more than 25 employees at a single location. - Participating with SANBAG to develop a public/private telecommunications center in San Bernardino County.				
3.2.2	Establish incentives and regulations to eliminate work trips including such actions as: - Implementing staggered, flexible and compressed work schedule in public agencies. - Working with private agencies to incorporate work schedule flexibility programs for employers with more than 25 employees in a single location.	See Strategy 3.2.1	New Program	Community Development, Public Works	Department Budget, Transportation Grants and funds as available
3.2.3	Include trip reduction requirements in the development code with the goal of reducing home-to-work trips by facilitating and participating in the following programs: - Incorporation of design measures into new development and, where feasible into existing developments proposed for intensification, which include preferential parking areas for car and van pools, employee drop off areas, secure bicycle parking areas, bus turnout areas, etc. - Dissemination of information to city residents regarding the advantages of ride sharing and public transit.	See Strategy 3.2.1	New Program	Community Development, Public Works	Department Budget, Transportation Grants and funds as available

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Objective 3.3: Reduce automobile emissions by reducing the number of vehicles driven to a work site on a daily basis.					
3.3.1	Encourage the promotion of trip reduction and traffic mitigation measures for home-to-work trips by facilitating and participating in the following programs: • Goal-oriented trip reduction plans by employers (both public and private) with 25 or more employees. • Encourage the development and implementation of trip reduction plans from building owners and managers with tenants employing 100 or more employees.	See Strategy 3.2.1	New Program	Community Development, Public Works	Department Budget, Transportation Grants and funds as available
3.3.2	Promote and establish modified work schedules which reduce peak period auto travel.	See Strategy 3.2.1	New Program	Community Development, Public Works	Department Budget, Transportation Grants and funds as available
3.3.3	Encourage the development of job-intensive uses within designated employment centers to reduce the length of home-to-job commutes by local residents.	Ongoing	New Program	Community Development	Department Budget, Development Fees
3.3.4	Support the design and implementation of the citywide system of bikeways and pedestrian trails as nonpolluting circulation alternatives by requiring as part of the development review process the installation of planned bicycle routes, paths, and lanes where designated; and the construction of necessary bicycle parking and storage areas within convenient commercial, employment and recreation activity areas.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
3.3.5	Encourage and facilitate where possible, the financing and construction of park-and-ride facilities including such actions as: • Taking advantage of underutilized parking areas within existing uses as a means of providing park-and-ride facilities. • Working with Caltrans on the location and design of park and ride facilities within parcels left over from the construction of Foothill Freeway. • Involve Omnitrans, SCAG, LACTC, and other appropriate agencies in project review procedures to coordinate future development and transit facility locations (bus stops, bus stations, transfer points, etc).	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
3.3.6	Require as part of the development review process that preferential parking be included in parking lot designs to high occupancy vehicles, vanpools, and shuttle services.	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
<i>Objective 3.4: Integrate air quality planning with the land use and transportation planning design, review and development processes.</i>					
3.4.1	Where residential or office uses will be located adjacent to or near commercial development, ensure that site designs facilitate rather than discourage pedestrian movement between uses (e.g., locate buildings adjacent to the street with parking behind such that pedestrians need not walk through parking lots to reach their destination; provide clear pedestrian paths and connections, etc.).	Ongoing	New Program	Community Development, Public Works	Department Budget, Development Fees
3.4.2	Locate and design new development in a manner that will minimize direct and indirect emission of air contaminants through such means as: • Amending the zoning ordinance to integrate opportunity for mixed use overlay area capable of combining commercial, office and residential uses in close proximity to one another as a means to enhance pedestrian movement throughout the City.	Develop comprehensive implementation strategy by 8 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
	• Providing for increased intensity of development in designated locations along existing and proposed transit corridors. • Incorporating location, and operational standards into the development code for ancillary employee services (including but not limited to child care, restaurants, banking facilities, convenience markets) at major employment centers for the purpose of reducing midday vehicle trips.				
3.4.3	Integrate an interconnected traffic signal control system in all new projects providing roadway improvements and develop programs to retrofit existing signals on all streets where traffic volume and delay time is significant.	As new development occurs - Ongoing	Enhancement of Existing Program	Community Development, Public Works	Department Budget, Capital Improvement Program, private development, Development Fees
3.4.4	Establish parking lot design guidelines which outline methods and provides incentives that: • Encourage reciprocal parking designs and/or agreements between adjacent developments. • Provides for the consolidation of driveways along major commercial corridors such as Base Line. • Requires parking areas be efficiently designed so as to minimize internal circulation conflicts.	Adopt detailed guidelines 24 months post General Plan adoption	New Program	Community Development, Public Works	Department Budget
3.4.5	As part of capital improvement projects, install, where appropriate and feasible, traffic improvements which improve the efficiency of transportation systems such as: • the installation of dedicated turns lane and pockets • the construction of bus turnouts and shelters • restriping of traffic lanes to accommodate optimal through traffic flow.	Ongoing as part of Capital Improvements Program	Enhancement of Existing Program	Public Works	CIP funds

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
3.4.6	Ensure that all new development applications include a air quality improvement summary as per AQMD and SCAG Air Quality Handbook Guidelines which describes the general methods which have been used in the development design to reduce air emissions.	Ongoing	New Program	Community Development	Department Budget, Development Fees
<i>Objective 3.5: Regulate the location and design of land uses which are especially sensitive to air pollution.</i>					
3.5.1	Participate with the SCAQMD in the formulation of appropriate standards for regulating the location and protection of sensitive receptors (schools, day care facilities, hospitals and the like) from excessive and hazardous emissions.	Ongoing	New Program	Community Development	Department Budget
3.5.2	Encourage the inclusion of buffer areas within residential and sensitive receptor site plans to separate and/or buffer those uses from freeways, arterials, point sources, and hazardous material locations.	Ongoing	New Program	Community Development	Department Budget, Development Fees
<i>Objective 3.6: Reduce particulate emissions from temporary roads, parking lots, construction sites and agricultural lands.</i>					
3.6.1	Require that construction activity and agricultural operations include appropriate and feasible measures to minimize fugitive dust. Potential measures include: Grading: - Minimizing the extent of cleared or graded areas at any given time by limiting the amount of top soil and vegetative cover that can be removed, to the area currently under construction. - Regular watering of graded and cleared areas. - Establishment of vegetative cover as soon as possible after grading is completed. - Application of AQMD approved soil tackifiers, soils stabilization mulches, and/or oil emulsions to all inactive construction areas(previously graded areas which remain inactive for more than 96 hours), where feasible.	Ongoing	Existing Program	Community Development, Public Works	Department Budget, Development Fees

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Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
	- The stockpile of topsoil removed during the grading process and its replacement on finished areas to improve revegetation of the disturbed area. - Suspension of grading operations during second and third stage smog alerts or when wind speeds (as instantaneous gusts) exceed 25 miles per hour. Transportation: - Establishment of maximum speed limits within construction areas. - Wash off trucks and equipment which leave construction or agricultural site. - Development of construction traffic plans to minimize traffic flow interference from construction activities to adjacent public rights of way. - Require that construction activities which may decrease traffic flow on public right of ways are scheduled on off-peak traffic hours. Stationary Equipment: - Use of stationary construction or agricultural equipment which is designed to produce low emissions and/or burns low sulfur fuel. - Use of existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.				
3.6.2	Require as a condition of approval that new development offset the loss of existing trees with the establishment of, or the participation in an existing urban tree planting program either at the construction site or elsewhere in the community.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Objective 3.7: Reduction of particulate and stationary emissions attributed to the removal, transportation and processing of mineral resources within the study area.					
3.7.1	Prior project approval of such uses, require that mineral extraction, transportation and processing facilities located within the study area obtain permits from and satisfy all requirements of the Air Quality Management District.	Ongoing	New Program	Community Development	Department Budget, Development Fees, mineral extraction fees when available
3.7.2	Incorporate the requirements of Objective 3.6 as they apply to mineral extraction, transportation, and processing facilities.	Ongoing	New Program	Community Development	Department Budget, Development Fees
3.7.3	Require that physical barriers, such as the following, are designed and constructed along roadways and sensitive receptors to supplement methods to reduce the effects of blowing dust from day-to-day operations: • Drought tolerant screening vegetation along borders of processing facilities which are adjacent to roadways or sensitive land uses. • Landscaped berms along project edges where extraction and processing activities are currently taking place. • Other physical barriers designed to prevent visible particulate matter from being deposited upon public roadways and sensitive land uses as a result of such operations.	Ongoing	New Program	Community Development	Department Budget, Development Fees

NOISE

Introduction

Noise has long been an accepted part of modern civilization and the urbanization process. The general background level of noise, however, seems to be rising as modern transportation systems develop and human dependence upon machines increases. As society becomes increasingly mobile and mechanization continues to increase, so does the need for a better understanding of the effects of noise exposure in the environment.

Adoption of a Noise Element has been a requirement of the General Plan since 1971. Section 65302 (g) of the California Government Code requires:

"A noise element which shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels..."

Current and projected noise levels are required for several sources including; highways and freeways, local streets and primary arterials, railroad operations, airport operations, local industrial plants, and other ground stationary noise sources.

State Legislative guidelines regarding the preparation of a Noise Element were amended in 1985. The primary change was the methodology for developing noise contours. A noise contour, which is similar to a topographic contour, maps a concentric "footprint" around the noise source. The legislation now permits the use of either noise monitoring or approved methods of noise modeling in preparing noise contours. Both types of analysis were utilized in the preparation of this element. Stationary sources were monitored while vehicular noise was modeled.

Purpose and Function

The Noise Element provides the goals and strategies necessary to ensure an appropriately quiet environment for the land uses in Highland. Transportation noise sources, roadway noise, and aircraft noise are all under either State or federal jurisdiction, and therefore, beyond local control. Land use and development planning decisions are generally made in terms of limiting locations or volumes of such sources, of avoiding development in noise impact zones or in shielding impacted receiver sites. Industrial process noise sources and nuisance source control not pre-empted by state law, however, can be regulated by a local ordinance. As yet, the City of Highland does not have a municipal noise ordinance that would be applicable to industrial source activities. Regulations and controls by the state are structured to address the permissible loudness of a source at some specified distance, but does not fully consider the patterns of land use that such sources may affect.

The Noise Element has been organized to address the following noise issues:

- Existing Noise Sources
- Noise Sensitive Land Uses
- Noise Assessment and Modeling

Noise

Goals Summary

Goal 1

To protect citizens of Highland from the harmful and annoying effects of exposure to excessive noise, and the encroachment of incompatible land uses within areas affected by existing noise-producing uses.

Existing Setting

Noise Sources

The sources of noise in Highland fall into three basic categories: aircraft (from Norton Air Force base and other aircraft overflights); major and minor arterial roadways; and stationary sources. Each of these sources and their impacts on the noise environment of Highland are summarized in the following paragraphs.

Major and Minor Arterial Roadways

Traffic noise on surface streets is a significant source of noise within the community. The major roadways in the city include: Pacific Street, Base Line, Ninth Street, Fifth Street, Third Street, Del Rosa Drive, Sterling Avenue, Victoria Avenue, Alabama Avenue, Palm Avenue, Boulder Avenue.

Noise levels along roadways are determined by a number of traffic characteristics. Most important is the average daily traffic (ADT). Additional factors include the percentage of trucks, vehicle speed, the time distribution of this traffic and gradient of the roadway.

In general, most of the land uses along the major roadways are open space, commercial, and industrial. However, there are a number of scattered single-family homes that are located along many of these roadways.

Stationary Sources

Other noise sources in the community include industry and construction, often referred to as fixed or stationary sources. Industrial noise, generated by processing and operations, is usually of long duration at relatively low frequencies. Construction noise sources (diesel engines, air compressors, electric motors, etc.), generate noise for extended periods of time with intermittent high noise levels.

One major stationary noise generator is associated with mining and processing of sand and gravel operations, southeast of the City's boundary. Noise generated from the gravel pit is produced by the use of vehicles and aggregate processing equipment. Vehicles include bulldozers, loaders, and other heavy machinery, as well as heavy trucks used to load finished aggregate products for delivery via public roadways.

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Noise emissions from mineral extraction activities are most heavily concentrated within the processing area. The observed noise impact at the nearest City of Highland residential receptors north of the project site from all such activities will thus be a combination of distinct point noise sources and a diffuse collection of mobile equipment noise sources.

Noise impacts from hauling activities were calculated at four receiver sites and were calculated by dividing the haul route into three separate source segments. All of the locations remained well below the 50 dBA CNEL exposure level when any terrain propagation blocking effects are incorporated into the analysis.

Aircraft Operations

Typical noise sources in and around airfields usually include aircraft, surface traffic, and other human activities. Military aircraft operations and surface traffic on local streets and highways have been the primary sources of noise in the vicinity of Norton Air Force Base. The 65 CNEL contour for the base extends into the southern portion of the City. Aircraft noise at Norton Air Force Base occurs during aircraft engine warmup, maintenance and testing, taxiing, takeoff, approach, and landing.

Sensitive Noise Receptors

Noise sensitive land uses are defined as those specific land uses which have associated indoor and/or outdoor human activities that may be subject to stress and/or significant interference from noise produced by community sound sources. Such human activity typically occurs daily for continuous periods of 24 hours or is of such a nature that noise is significantly disruptive to activities that occur for shorter periods. Specifically, noise sensitive land uses include: residences of all types, hospitals, rest homes, convalescent hospitals, places of worship, schools and day care centers.

Land uses deemed noise sensitive by the State of California include: schools, hospitals, rest homes, long-term care and mental care facilities. Some jurisdictions also elect to consider day care centers, single family dwellings, churches, libraries, and recreation areas as sensitive to noise. Moderately sensitive land uses typically include: multi-family dwellings, hotels, motels, dormitories, and out-patient clinics.

Relatively noise insensitive land uses are business, commercial, and professional developments. Insensitive noise receptors include industrial, manufacturing, utilities, agriculture, natural open space, undeveloped land, parking lots, rifle ranges, warehousing, liquid and solid waste facilities, salvage yards, and transit terminals.

Noise Model

The noise environment is commonly presented graphically in terms of lines of equal noise levels, or contours. The existing noise environment in Highland was modelled using a comprehensive noise measurement survey of existing noise sources and incorporating these results into computer noise models.

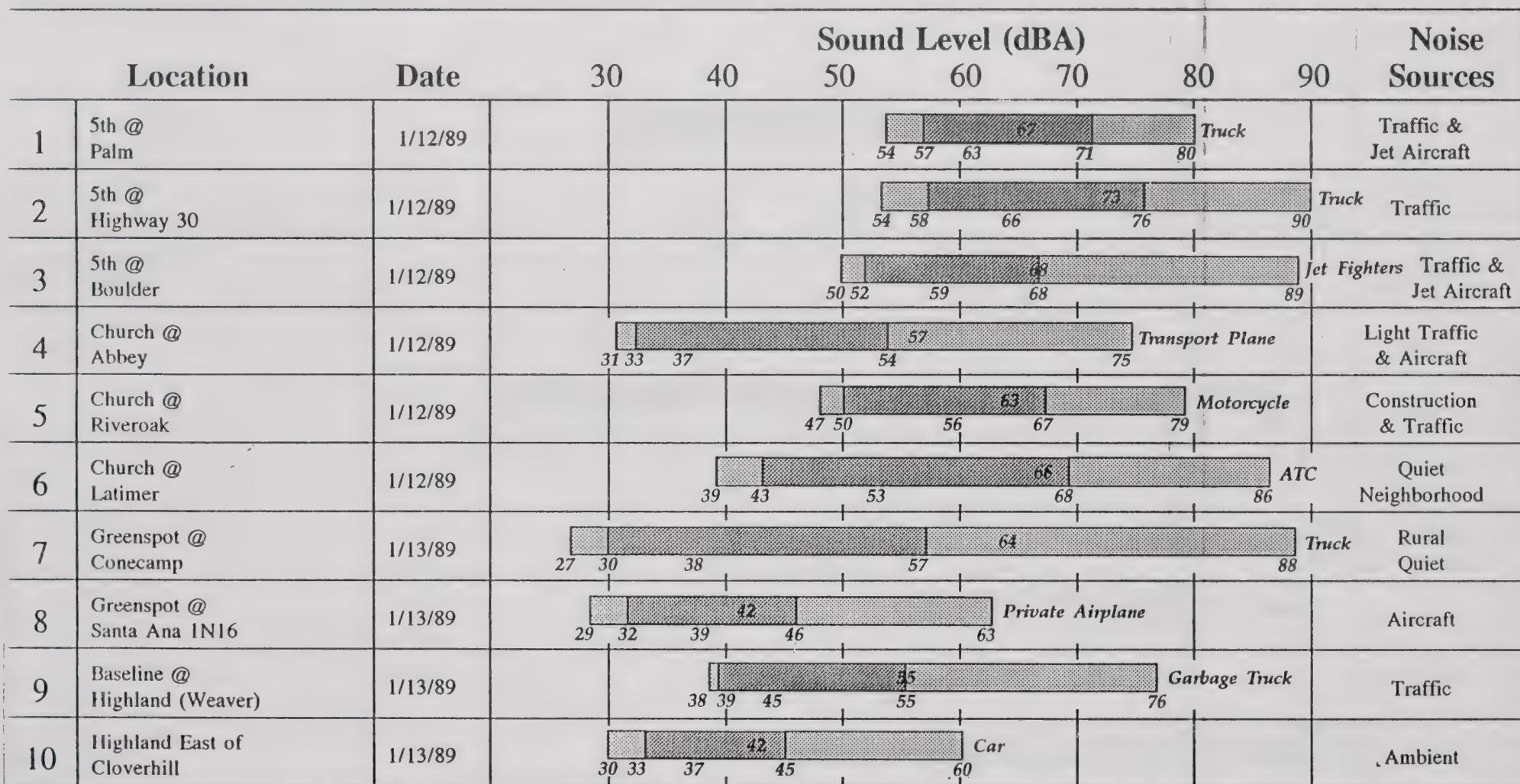
Twenty sites were selected for measurement of the noise environment in Highland. A review of noise complaints and identification of major noise sources in the community provided the initial base for development of the community noise survey. The measurement locations were selected on the basis of proximity to major noise sources and noise sensitivity of the land use.

The Highland Noise Element measurement survey utilized the Bruel & Kjaer 4427 automated digital noise data acquisition system. This instrument automatically calculates both the Equivalent Noise Level (LEQ) and Percent Noise Level (L%) for any specific time period. To take into account intermittent noise, Percent Noise Level is measured. The Percent Noise Level is the level exceeded X% of the time during the measurement period. For example, L90 is the noise level exceeded 90 percent of the time, representing the background or minimum noise level, L50 is the level exceeding 50 percent of the time representing the average noise level, and L10 is the level exceeded 10 percent of the time, representing the peak or intrusive noise levels. The noise monitor was equipped with a Bruel & Kjaer 1/2 inch electric microphone. The system was calibrated with a Bruel & Kjaer calibrator with calibration traceable to the National Bureau of Standards. Calibration for the calibrator is certified through the duration of the measurements by Bruel & Kjaer. This measurement system satisfies the ANSI (American National Standards Institute) Standards 1.4 for Type 1 precision noise measurement instrumentation.

The noise measurement program was conducted on January 12, 13, and 16, 1989 at twenty locations throughout the City. The results of the ambient noise measurements at each site are depicted in Figure II-F-1. These figures also depict the date and time of the measurement and the primary noise source affecting the noise environment. Each site was monitored for a minimum of 20 minutes. The quantities measured were the Equivalent Noise Level (LEQ), the maximum noise level and the Percent Noise Levels (L%).

The traffic noise levels projected in the Noise Element were computed using the Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, December 1978). The FHWA Model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the LEQ noise level. A computer code has been written which computes equivalent noise levels for each of the time periods used in CNEL. Weighing these noise levels and summing them results in the CNEL for the traffic update to the Circulation element for the City. The traffic mix data for the arterials are based on measurements for roadways in Southern California and are considered typical for arterials in this area. The distances to the CNEL contours for the roadways in the vicinity of Highland are given in Table II-F-1. These represent the distance from the centerline of the road to the contour value shown. Note that these tables do not include the mitigating effect of noise barriers or topography.

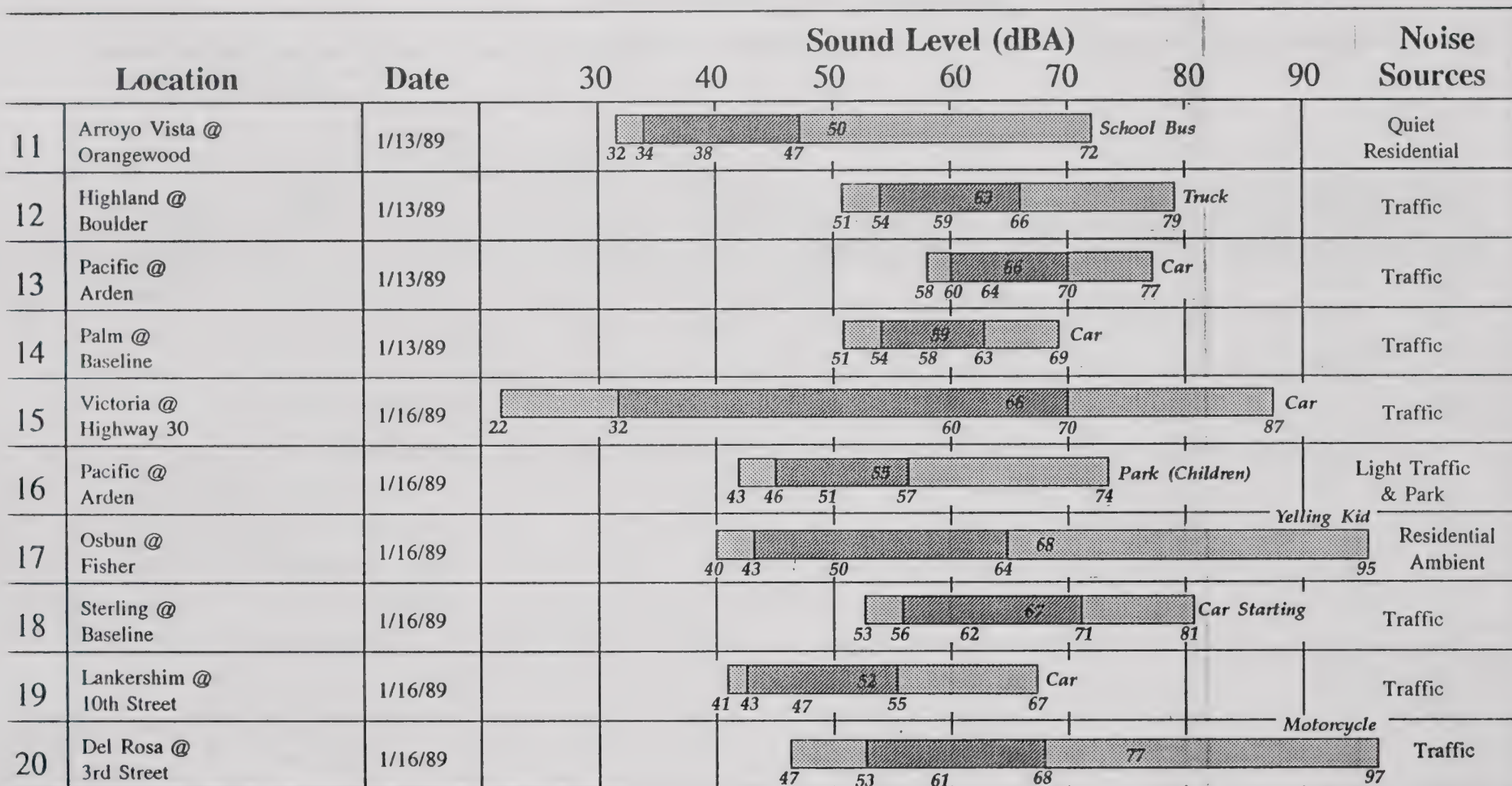
FIGURE II-F-1
NOISE MEASUREMENT SURVEY RESULTS



Legend:  Cause of Lmax

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FIGURE II-F-1
NOISE MEASUREMENT SURVEY RESULTS



Source: Mestre Greve Associates

Legend:  Cause of Lmax

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Table II-F-1
Distance To Existing CNEL Contours (Feet)

MESTRE GREVE ASSOCIATES
CNEL CONTOUR SPREADSHEET

Index Key: Orange County Arterial Mix 1
Freeway w/ 5% Trucks (2.5% MT, 2.5% HT) 2
Freeway w/ 7% Trucks (3.5% MT, 3.5% HT) 3

Roadway	Link	Index	ADT	Speed	CNEL100	Barr. Att	**Distance to CNEL Contour		
							70 CNEL	65 CNEL	60 CNEL
Pacific St	Del Rosa Ave to Sterling Ave	1	8.3	45	61.6	0	28	59	128
	Sterling Ave to Victoria Ave	1	9.6	45	62.2	0	30	65	141
Baseline St	Del Rosa to Sterling Ave	1	20.5	45	65.5	0	50	108	234
	Sterling Ave to Victoria Ave	1	18.2	45	65.0	0	46	100	216
	Victoria Ave to Palm Ave	1	15.7	45	64.4	0	42	91	196
	Palm Ave to SR-30	1	6.7	45	60.7	0	24	51	111
	SR-30 to Boulder Ave	1	5.0	45	59.4	0	20	42	91
Ninth St	Del Rosa Ave to Sterling Ave	1	10.3	45	62.5	0	32	69	148
	Sterling Ave to Victoria Ave	1	8.3	45	61.6	0	28	59	128
Fifth St	West of Del Rosa Ave	1	8.0	45	61.4	0	27	58	125
	Del Rosa Ave to Sterling Ave	1	5.9	45	60.1	0	22	47	102
Third St	Sterling Ave to SR-30	1	6.3	45	60.4	0	23	49	106
	West of Del Rosa Ave	1	14.3	45	64.0	0	40	85	184

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Table II-F-1
Distance To Existing CNEL Contours (Feet)

MESTRE GREVE ASSOCIATES CNEL CONTOUR SPREADSHEET									
Index Key:		Orange County Arterial Mix	1						
		Freeway w/ 5% Trucks (2.5% MT, 2.5% HT)	2						
		Freeway w/ 7% Trucks (3.5% MT, 3.5% HT)	3						
								**Distance to CNEL Contour	
Del Rosa Ave	Del Rosa Ave to Fifth St	1	7.6	45	61.2	0	26	56	121
	Third St to Fifth St	1	8.4	45	61.6	0	28	60	129
	Fifth St to Ninth St	1	6.5	45	60.5	0	23	50	109
	Ninth St to Baseline Ave	1	5.4	45	59.7	0	21	45	96
Sterling Ave	Third St to Ninth St	1	12.3	45	63.3	0	36	77	166
	Ninth St to Baseline Ave	1	13.4	45	63.7	0	38	82	176
	Baseline Ave to Pacific St	1	17.6	45	64.9	0	45	98	211
	Pacific St to Highland Ave	1	14.8	45	64.1	0	40	87	188
Victoria Ave	Third St to Ninth St	1	7.0	45	60.9	0	25	53	114
	Ninth St to Baseline Ave	1	8.8	45	61.8	0	29	62	133
	Baseline Ave to Pacific St	1	9.8	45	62.3	0	31	66	143
	Pacific St to Highland Ave	1	6.0	45	60.2	0	22	48	103
Alabama Ave	South of Third St	1	16.8	45	64.7	0	44	95	205

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Table II-F-1
Distance To Existing CNEL Contours (Feet)

MESTRE GREVE ASSOCIATES
CNEL CONTOUR SPREADSHEET

Index Key: Orange County Arterial Mix 1
Freeway w/ 5% Trucks (2.5% MT, 2.5% HT) 2
Freeway w/ 7% Trucks (3.5% MT, 3.5% HT) 3

								**Distance to CNEL Contour	
Palm Ave	Third St to Fifth St	1	13.1	45	63.6	0	37	80	173
	Fifth St to Baseline St	1	6.7	45	60.7	0	24	51	111
	Baseline St to Pacific St	1	11.8	30	58.8	0	18	39	83
Boulder Ave	City Limit to Baseline St	1	7.4	45	61.1	0	26	55	118
	Baseline St to Pacific St	1	5.9	45	60.1	0	22	47	102
	Pacific St to Highland Ave	1	6.6	45	60.6	0	24	51	110

Source: Mestre Greve Associates, 1990.

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Noise

Issues

Buffering Noise Sources

As portions of Highland continues to develop into urban densities, the incidence of noise will increase proportionately. Although not all noise can be completely eliminated, standards for the buffering and reduction of noise within the community will need to be addressed. Residential land use is the most sensitive because of the nature of activities which occur over a 24-hour period as well as the generally-accepted need for, and design incorporating, outdoor living areas.

Norton Air Force Base

Norton Air Force Base is located just outside the City's southern boundary and operations from the base overfly Highland's southern section. However, with the Base closure in 1994, aircraft noise is projected to be less than is currently experienced. The area exposed to L_{dn} of 65 dBA or greater is projected to decrease from approximately 7,300 acres to about 300 acres by 2015 with the proposed plan, when new, quieter aircraft predominate (see Figures II-F-7 and II-F-8).

Traffic Noise

Traffic noise on surface streets is a significant source of noise within the community. As traffic levels increase along major arterials, land uses adjacent to these and other roadways will be affected by motor vehicle noise. Construction of the Foothill Freeway (State Route 30) will generate noise due to heavy equipment operations. Although attenuation measures were incorporated into the design of the freeway, high noise levels may impact surrounding land uses.

Quarry Operations

Other major noise generators that affect residents of Highland are the sand and gravel quarry operations in the southeast portion of the study area. Noise is generated not only from the quarry site, but also from the haul trucks that transport the raw material, and the proposed West Basin processing plant itself. The proposed processing plant will generate the largest amount of noise, through the processing, stockpiling, and loading of sand and gravel.

Gun Club

A small shooting range located near Fifth and Orange Streets, has existed for over thirty years. Its continued use will produce intermittent noise from firearms. Currently, the club is surrounded by open space. As urbanization continues to surround the gun club, it will be critical to preserve the buffer of open space.

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Concepts, Options, and Alternatives

Characteristics of Noise

The principal characteristics of sound are its loudness (amplitude) and frequency (pitch). The frequency of a sound is significant because the human ear is not equally sensitive to all frequencies. At low frequencies, characterized as a rumble or roar, the ear is not very sensitive while at higher frequencies, characterized as a screech or a whine, the ear is most sensitive. To reflect this varying sensitivity, an A-weighted decibel scale (dBA) is typically used to measure the perceived loudness of a sound.

Noise refers to sound pressure variations audible to the ear. The audibility of a sound depends on the amplitude and frequency of the sound and the individual's capability to hear the sound. Whether the sound is judged as noise depends largely on the listener's current activity and attitude toward the sound source, as well as the amplitude and frequency of the sound. To obtain convenient measurements and sensitivities at extremely low and high sound pressures, sound is measured in units of the decibel (dBA). The dBA is a dimensionless unit related to the logarithm of the ratio of the measured level to a referenced level. Because the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly. A listener often judges an increase in sound levels of 10 dBA as a doubling of sound. Examples of the decibel level of various noise sources are shown in Figure II-F-2.

Sound levels typically vary with time. This is especially true for areas near airports where noise levels will increase substantially as the aircraft passes overhead and afterwards diminish to typical community levels. Both the Department of Defense and the FAA have specified the following first three noise metrics to describe aviation noise.

Maximum Sound Level is the highest A-weighted sound level observed during a single noise event no matter how long the sound may persist.

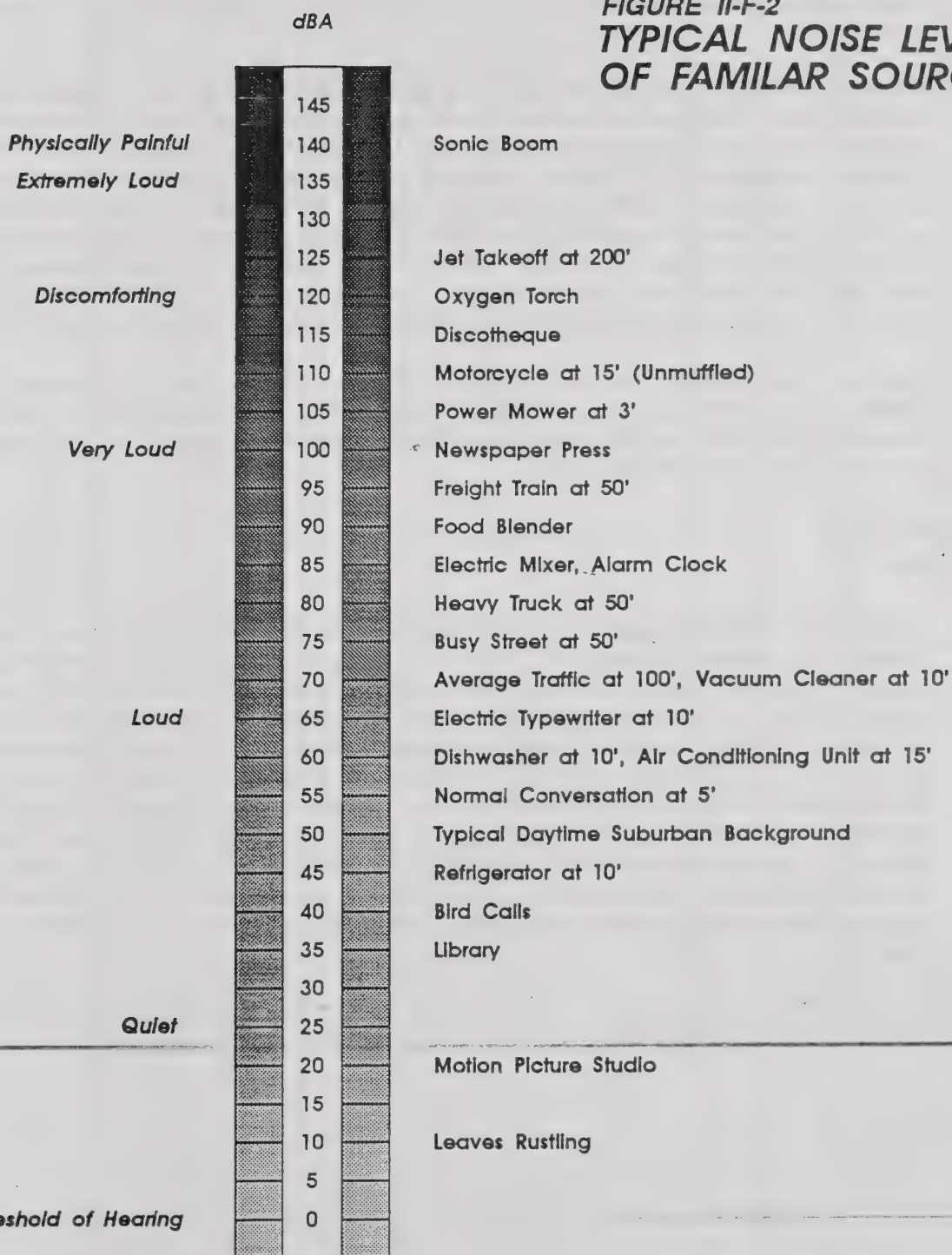
Sound Exposure Level (SEL) value represents the A-weighted sound level integrated over the entire duration of the event and referenced to a duration of one second. Hence, it normalizes the event to a 1-second event. Typically, most events, particularly aircraft flyovers, last longer than one second, and the SEL value will be higher than the maximum sound level of the event.

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**FIGURE II-F-2
TYPICAL NOISE LEVELS
OF FAMILAR SOURCES**



SOURCE: PLANNING NETWORK, 1992.

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Day-Night Average Sound Level (L_{dn}) is the 24-hour energy average A-weighted sound level with a 10 dBA weighing added to those levels occurring between 10:00 p.m. and 7:00 a.m. the following morning. The 10 dBA weighing is a penalty representing the added intrusiveness of noise during normal sleeping hours. L_{dn} is used to determine land use compatibility with noise from aircraft and surface traffic. The expression L_{dn} is often used in equations to designate day-night average sound level.

Community Noise Equivalent Level (CNEL) is an artificial decibel increment added to quiet-time noise-levels in a 24-hour noise receptor. Community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that CNEL contours for planning purposes. An addition of five decibels is added to sound levels in the evening from 7:00 pm to 10:00 pm and an addition of 10 decibels to sound levels between 10:00 pm and 7:00 am. An interior CNEL of 45 dBA is mandated for multiple family dwellings, and is considered a desirable noise exposure for single family dwelling units as well. Since typical noise attenuation within residential structures with closed windows is well over 20 decibels, an exterior noise exposure of 65 decibels CNEL is generally the noise/land use compatibility guideline for new residential dwellings in California.

The sound from an individual source decreases with increasing distance. The amount of sound reaching the receiver is affected by barriers between the source and receiver (such as walls, landscaping, and buildings), atmospheric conditions (such as wind, temperature, and humidity), and the number of sources emitting sound.

Effects of Noise

Documented effects of excessive noise on people range from annoyance and inconvenience to temporary or permanent hearing loss. Table II-F-2 details the effects of noise on individuals living in various noise environments, and predicts the average community reaction to various cumulative sound levels in a residential setting. However, problems associated with noise can be much more widespread. Although no human illness is known to be directly caused by noise, studies have shown that noise is clearly an important cause of physical and psychological stress, and stress has been directly linked to many common health problems. Therefore, noise can be associated with many disabilities and diseases, such as heart disease, high blood pressure, headaches, fatigue, and irritability. Noise is also suspected to interfere with children's learning. Figure II-F-3 illustrates how excessive background noise can reduce the amount and quality of verbal exchange and therefore impact education, family lifestyles, occupational efficiency, and the quality of recreation and leisure time.

Table II-F-2
Effects Of Noise On People¹

Effects ²	Hearing Loss	Speech Interference		Annoyance ³	Average Community Reaction ⁵	General Community Attitude Towards Area
		Indoor	Outdoor			
Day-Night Average Sound Level in Decibels	Qualitative Description	% Sentence Intelligibility	Distance in Meters for 95% Sentence Intelligibility	Percent of Population Highly Annoyed ⁴		
75 and above	May Begin to Occur	98%	0.5	37%	Very Severe	Noise is likely to be the most important of all adverse aspects of the community environment.
70	Will Not Likely Occur	99%	0.9	25%	Severe	Noise is one of the important adverse aspects of the community environment.
65	Will Not Occur	100%	1.5	15%	Significant	Noise is one of the important adverse aspects of the community environment.
60	Will Not Occur	100%	2.0	9%	Moderate to Slight	Noise may be considered an adverse aspect of the community environment.
55 and below	Will Not Occur	100%	3.5	4%		Noise considered no more important than various other environmental factors.

Source: U.S.D.O.T. "Guidelines for Considering Noise in Land Use Planning and Control," 1980.

- ¹ Research implicates noise as a factor producing stress-related health effects such as heart disease, high-blood pressure and stroke, ulcers and other digestive disorders. The relationships between noise and these effects, however, have not as yet been quantified.
- ² "Speech Interference" data are drawn from the following tables in EPA's "Levels Document": Table 3, Figure D-1, Figure D-2, Figure D-3. All other data from National Academy of Science 1977 report "Guidelines for Preparing Environmental Impact Statements on Noise, Report of Working Group 69 on Evaluation of Environmental Impact of Noise."
- ³ Depends on attitudes and other factors.
- ⁴ Attitudes or other non-acoustic factors can modify this. Noise at low levels can still be an important problem, particularly when it intrudes into a quiet environment.
- ⁵ The percentages of people reporting annoyance to lesser extent are higher in each case. An unknown small percentage of people will report being "highly annoyed" even in the quietest surroundings. One reason is the difficulty all people have in integrating annoyance over a very long time.

Noise Source Controls

The perception of the community's character is often determined by what visitors perceive as the existing background or ambient noise level within the community. The general concepts related to the regulation of land use activities in order that an acceptable community ambient noise level is preserved fall into two categories: the control of nuisance noise at the source, and integrating noise buffering techniques into new development to protect sensitive noise receptors.

Several basic techniques are available to minimize the adverse effects of noise from noise sources. Regulatory mechanisms available to control stationary source noise include:

- A City Noise Ordinance.
- The application of "conditions of approval" on new developments specifically geared to the reduction of noise generated from the property.
- Limitations on non-emergency construction activities which are adjacent to existing noise sensitive uses to daylight hours, between 7:00 a.m. and 7:00 p.m.
- The provision of noise information in permit applications for swimming pool and spa equipment and residential and commercial air conditioning systems.
- Land use policy and approval practices, as outlined in the General Plan.

Regulatory mechanisms available to control mobile source noise include:

- Consideration of truck route locations, effects of truck mix, posted speed limits, and future motor vehicle volumes on noise levels adjacent to master planned roadways.
- The reduction of traffic volumes through residential neighborhoods.
- Evaluation of new highway and arterial roadway extensions for potential noise impacts on existing and future land uses.
- Evaluation of new transportation facilities locations.

If source controls are not effective, the following receptor site/structure techniques should be considered:

- Acoustic site planning which places outside activity areas away from noise sources.
- Acoustic construction techniques which implement baffles, insulation, dual plane glazing and other such sound reduction methods.
- The erection of noise barriers in the form of landscaped walls or berms.
- The inclusion of a physical separation between noise sources and sensitive receptors.

Existing Unmitigable Noise: There exists within Highland, certain activities which have the potential to create nuisance noise that cannot be adequately controlled either at the source or receptor. Overflight noise from Norton Air Force Base, which will continue to a lesser degree after its closure, will be beyond the community's standards for ambient noise level. In addition, even with the mitigation measures in place to reduce noise levels from the proposed West Basin processing plant, it may not be possible to attain an acceptable ambient noise level in certain areas of the community.

Existing roadway noise in previously developed areas may also lead to situations where techniques to reduce noise impacts are limited. The erection of noise barriers along major roadways may be hampered, for example, by existing residential setbacks and the unattractive appearance of "walled canyons," which may be created. In these cases, noise reduction techniques may be limited to the retrofitting architectural controls mentioned above.

Land Use Compatibility Guidelines

The purpose of this section is to present information regarding the compatibility of various land uses with environmental noise. It is from these guidelines and standards that the City of Highland Noise criteria and standards will be developed. Noise/land use guidelines have been produced by a number of Federal and State agencies including the Federal Highway Administration, the Environmental Protection Agency, the Department of Housing and Urban Development, the American National Standards Institute and the State of California. These guidelines, presented in the following paragraphs, are all based upon cumulative noise criteria such as L_{dn} , SNL, or CNEL.

In March 1974, The ENVIRONMENTAL PROTECTION AGENCY published a document entitled "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety: (EPA 550/9-74-004)." In Table II-F-3, 55 LDN is described as the requisite level with an adequate margin of safety for areas with outdoor uses; this includes residences and recreational areas. The EPA "levels document" does not constitute a standard, specification or regulation, but identifies safe levels of environmental noise exposure without consideration for economic cost for achieving these levels.

The FEDERAL HIGHWAY ADMINISTRATION (FHWA) has adopted and published noise abatement criteria for highway construction projects. The noise abatement criteria specified by the FHWA are presented in Table II-F-4 in terms of the maximum one-hour Noise Equivalent Level (LEQ). The FHWA noise abatement criteria basically establishes an exterior noise goal for residential land uses of 67 LEQ and an interior goal for residences of 52 LEQ. The noise abatement criteria applies to private yard areas and assumes that typical wood frame homes with windows open provide 10 dBA noise reduction (outdoor to indoor) and 20 dBA noise reduction with windows closed.

The STATE OF CALIFORNIA requires each city and county to adopt noise elements in their General Plans. Such Noise Elements must contain a noise/land use compatibility matrix. A recommended (but not mandatory) matrix is presented in the "Guidelines for the Preparation and Content of Noise Elements of the General Plan," (Office of Noise Control, California Department of Health, February 1976). (See Figure II-F-4.)

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Table II-F-3
Environmental Protection Agency Guidelines

Measures		Indoor			Outdoor		
		Activity Interference	Hearing Loss Consideration	To Protect Against Both Effects (b)	Activity Interference	Hearing Loss Consideration	To Protect Against Both Effects (b)
Residential with Outside Space and Farm Residences	Ldn Leq(24)	45	70	45	55	70	55
Residential with No Outside Space	Ldn Leq (24)	45	70	45			
Commercial	Leq (24)	(a)	70	70 (c)	(a)	70	70 (c)
Inside Transportation	Leq (24)	(a)	70	(a)			
Industrial	Leq (24)(d)	(a)	70	70 (c)	(a)	70	70 (c)
Hospitals	Ldn Leq (24)	45	(e) 70	45	55	70	55
Educational	Leq (24) Leq (24)(d)	45	70	45	55	70	55
Recreational Areas	Leq (24)	(a)	70	70 (c)	(a)	70	70 (c)
Farm Land and General Unpopulated Land	Leq (24)				(a)	70	70 (c)

Source: Environmental Protection Agency, 1974.

- CODE:
- a. Since different types of activities appear to be associated with different levels, identification of a maximum level for activity interference may be difficult except in those circumstances where speech communication is a critical activity. (See Figure II-F-3 for noise levels as a functions of distance which allow satisfactory communication.)
 - b. Based on lowest level.
 - c. Based only on hearing loss.
 - d. An Leq (8) of 75 dBA may be identified in these situations so long as the exposure over the remaining 16 hours per day is low enough to result in a negligible contribution to the 24-hour average, i.e., no greater than an Leq of 60 dBA.
 - e. Refers to energy rather than arithmetic averages.

Note: Explanation of identified level for hearing loss. The exposure period which result in hearing loss at the identified level is a period of 40 years.

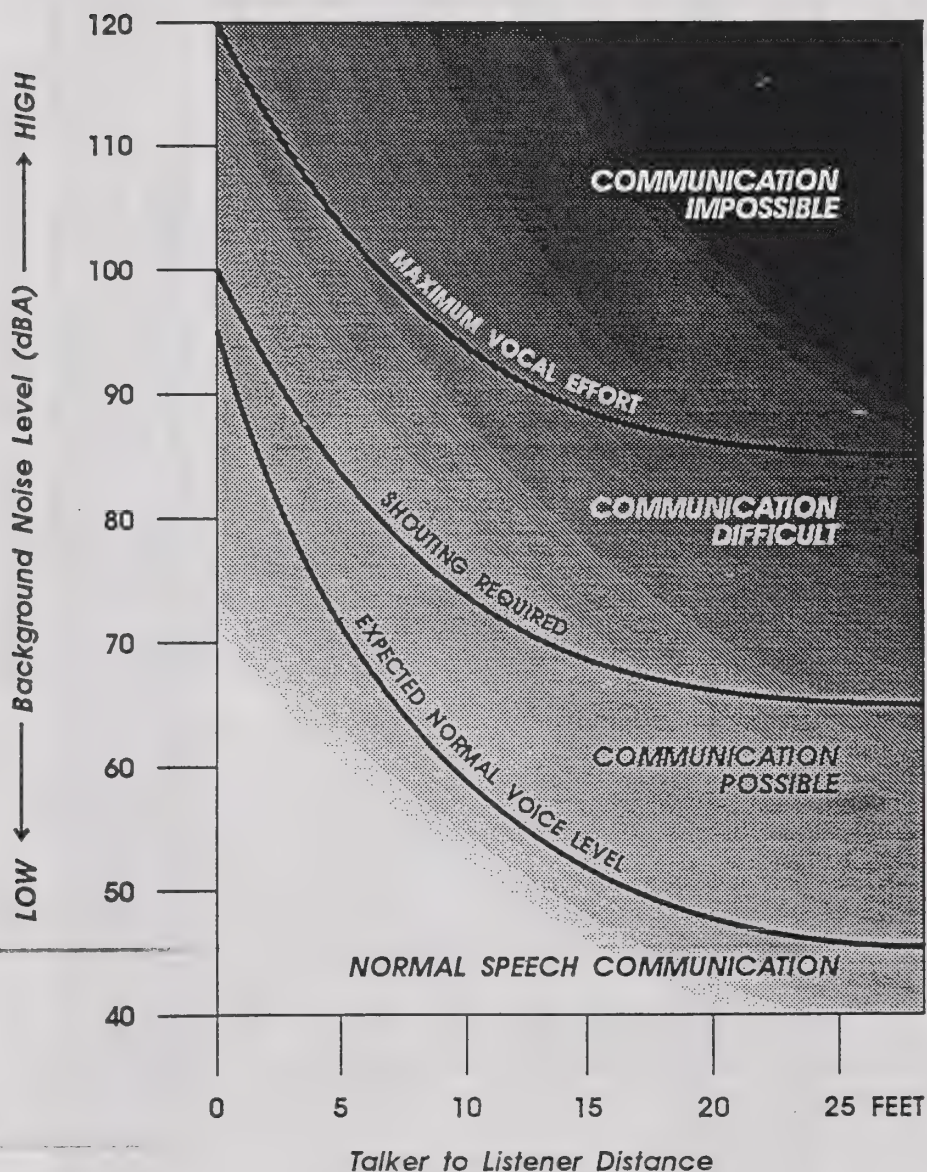
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FIGURE II-F-3
SPEECH COMMUNICATION
AS A FUNCTION
OF BACKGROUND
NOISE LEVELS



SOURCE: MILLER, "EFFECTS OF NOISE ON PEOPLE",
JOURNAL OF ACOUSTICAL SOCIETY OF AMERICA,
V.55, NO. 3, SEPTEMBER, 1974 & PLANNING NETWORK, 1991.

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Table II-F-4
FHWA Noise Abatement Criteria

Activity Category	Design Noise Level - Leq	Description of Activity Category
A	57 (Exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of open spaces, or historic districts which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas and parks which are not included in category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Category A or B above.
D	—	For requirements of undeveloped lands see FHWA PPM 773.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: Federal Highway Administration.

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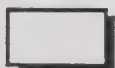
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**FIGURE II-F-4
CALIFORNIA
LAND USE
COMPATIBILITY
STUDIES**

LAND USE CATEGORY	COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)					
	55	60	65	70	75	80
RESIDENTIAL/LODGING Single Family/Duplex						
MULTI-FAMILY						
MOBILE HOMES						
HOTELS/MOTELS						
PUBLIC INSTITUTION Schools/Hospitals Churches/Libraries						
AUDITORIUMS/CONCERT HALLS						
COMMERCIAL OFFICES						
RETAIL						
INDUSTRIAL MANUFACTURING						
WAREHOUSING						
RECREATIONAL/OPEN SPACE Parks/Playgrounds/Golf Course Riding Stables						
OUTDOOR SPECTATOR SPORT						
OUTDOOR MUSIC SHELLS/ AMPHITHEATERS						
LIVESTOCK/WILDLIFE PRESERVES						
CROP AGRICULTURE						

LEGEND



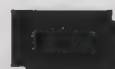
CLEARLY ACCEPTABLE
No special noise insulation required, assuming buildings of normal conventional construction.



NORMALLY UNACCEPTABLE
New construction should be discouraged. Noise navigation easements required for all new construction. If new construction does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.



NORMALLY ACCEPTABLE
Acoustical reports and noise easements required for all new residential construction. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.



CLEARLY UNACCEPTABLE
No new construction should be permitted.

SOURCE: STATE OF CALIFORNIA AIRPORT COMMISSION HANDBOOK, MODIFIED JANUARY 1991.

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Proposed West Basin Processing Plant and Old Webster Sand and Gravel Quarry

Although residents in the area are currently exposed to other noise sources, such as Norton Air Force Base, roadway traffic, and the on-going mining and processing of sand and gravel, the component of the proposed West Basin processing plant noise has a potential for nuisance. In addition, with more people and the reduction of the aircraft noise as Norton Air Force Base air traffic is reduced, the possibility of increased complaints from noise associated with area aggregate operations and truck traffic will increase. This changing character of both the source distribution and the receiver population suggests that any new area development must more carefully weigh the noise consequences of such action.

As documented in the Draft Subsequent Environmental Impact Report for the Old Webster Quarry/Plunge Creek West Basin Sand and Gravel Mining and Processing Plan (1990), the primary concern expressed by area residents is that the noise from existing mining and processing activities are clearly audible. Even if such noise does not exceed allowable standards, it is sufficiently distinct from other background sounds to cause a nuisance, especially at night and during other quieter periods. The component of the new processing plant noise that is continuous has a potential for nuisance, because it is audible even when other noise generators, such as aircraft flights and traffic noise, subside.

Low frequency noise source emissions can be reduced by modifying equipment. For example, the low frequency rumble at the existing East Basin plant was found to be primarily the result of rock striking the metal shrouding of the hoppers, collectors, and screens. By shielding and buffering this noise at the source, a significant reduction in noise is realized. The neighbors to the northeast of the East Basin Plant have indicated that these noises are no longer a nuisance. The proposed processing plant plans to use similar mitigation measures to reduce the proportion of low frequency noise emissions.

As stated above, the noise emissions are most heavily concentrated within the processing area. The observed noise impact at the nearest City of Highland residential receptors north of the project site from all such activities will thus be a combination of distinct point noise sources and a diffuse collection of mobile equipment noise sources.

According to the Draft Subsequent Environmental Impact Report for the Old Webster Quarry/Plunge Creek West Boon Sand and Gravel Mine and Processing Plant (1990), noise measurements from the existing processing plant were unable to actually detect plant operating noise at the nearest City of Highland residential receiver site. An analysis was made of the five major project-related noise sources made at a point directly north of the project site at 1,500 feet from each noise generator to simulate Highland's nearest residential area noise exposure (see Figures II-F-5 and II-F-6). Noise caused by the proposed West Basin processing plant would not cause a CNEL to exceed 65 CNEL nor would its contribution cause the cumulative CNEL in the area to exceed 65 decibels beyond the plant property boundaries.

Activity at the new processing plant will increase the volume of truck traffic on nearby roadways. It is estimated that the proposed plant will generate 741 daily truck trips when operating at full capacity. This equates to roughly 2,223 passenger cars, using a factor of 3.0 passenger cars per truck. In addition, 30 to 40 additional daily vehicle trips would be attributed to employees at the proposed processing operation. The anticipated roadway noise impact from truck traffic will be at a maximum as on-road vehicles exit the processing facility on Alabama Street, drive to Fifth Street, and subsequently, access the Route 30 Freeway for regional product distribution. According to the Draft Subsequent Draft Environmental Impact Report for the Basin old Webster Quarry/Plunge Creek West Basin San and Gravel Mining and Processing Plan, there will be a traffic noise change at 150 feet from the Fifth Street centerline of 2.3 CNEL. There are no firm guidelines on noise impact significance, although most jurisdictions use an increase from 1.0 to 3.0 CNEL as marginally significant, noticed only by those receivers extremely sensitive to traffic noise. Therefore, although the increased noise associated with increased traffic will not be insignificant, it will be unlikely that is noticed by most residential receivers. Impact control through limits on the hours of traffic increase during 'quiet' periods will be the most significant noise impact abatement measure associated with the proposed processing plant. The control of noise emissions as a function of time of day, rather than physical barriers on reliance on distance buffers, is the most critical factor in minimizing any increased noise impacts.

To reduce the noise and other associated impacts of additional vehicles, a private raw-material off-road haul road has been proposed between the Old Webster Quarry and the proposed West Basin Processing Plant.

Project implementation will also entail off-road hauling of ore from the Old Webster Quarry to the new Processing Plant. Noise impacts from hauling activities were calculated at 4 receiver sites. All of the locations remained well below the 50 CNEL exposure level. Therefore, off-road hauling noise impacts, neither individually nor cumulatively with processing activity impacts, will create an adverse noise impact at any nearly noise-sensitive residential receiver location.

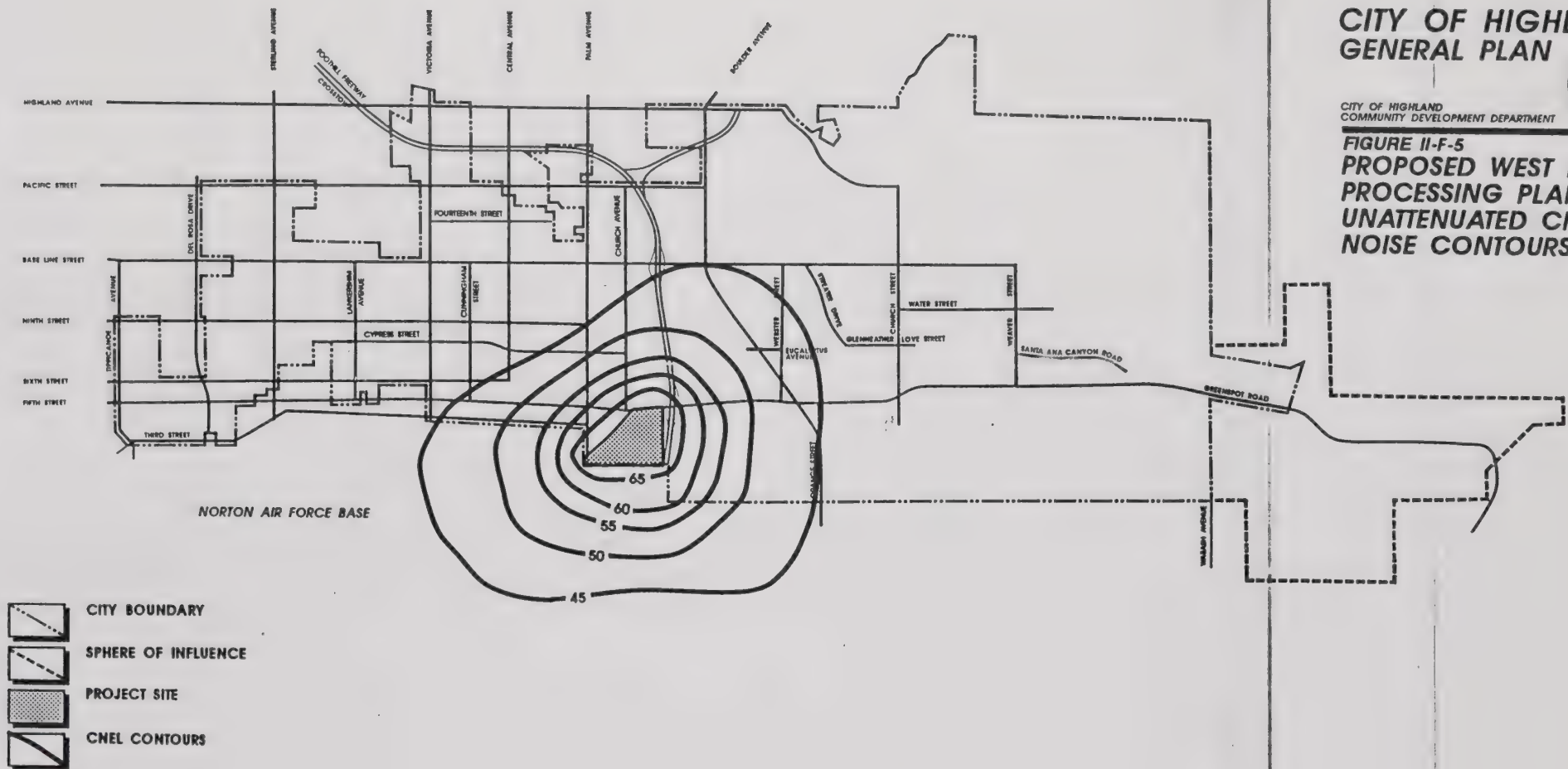
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**FIGURE II-F-5
PROPOSED WEST BASIN
PROCESSING PLANT-
UNATTENUATED CNEL
NOISE CONTOURS**



SOURCE: DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT, OLD WEBSTER QUARRY/PLUNGE CREEK
WEST BASIN SAND & GRAVEL MINING & PROCESSING PLAN, JULY 1990.

SOURCE: DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT, OLD WEBSTER QUARRY/PLUNGE CREEK WEST BATH SAND & GRAVEL MINING & PROCESSING PLAN, JULY 1990.

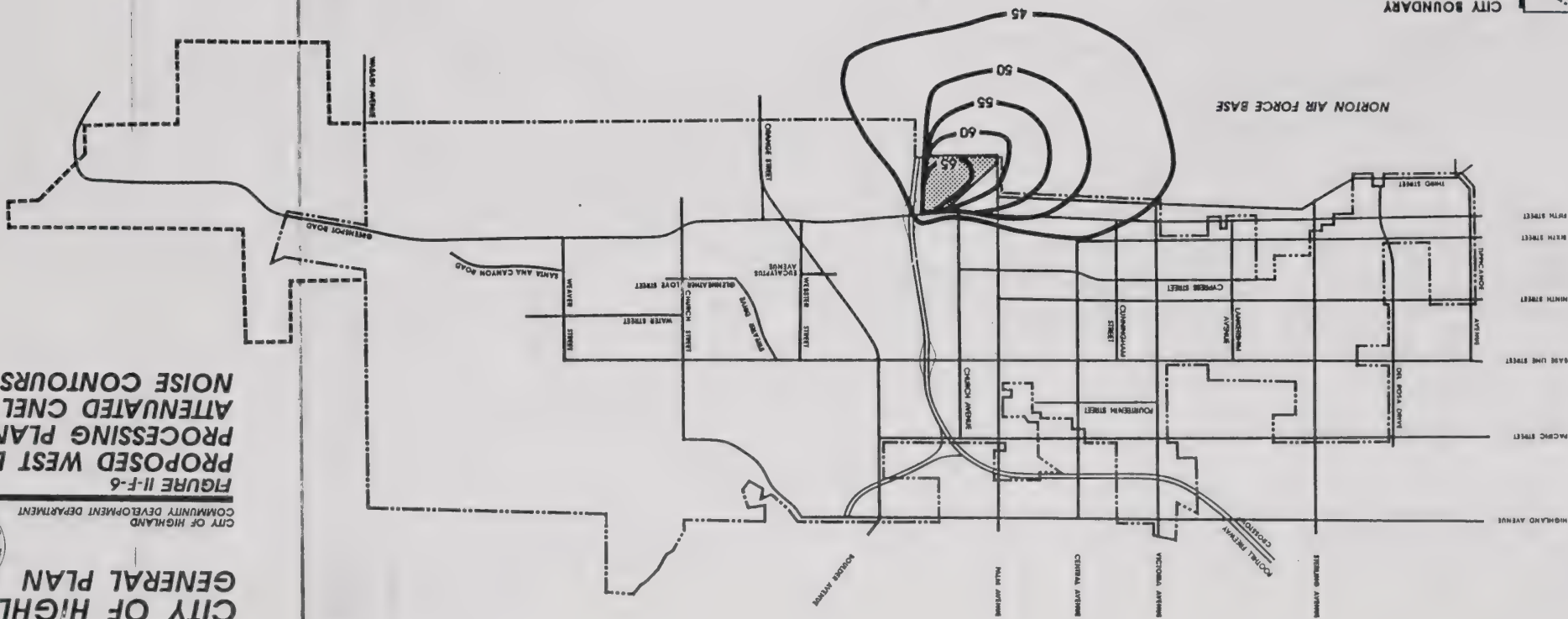
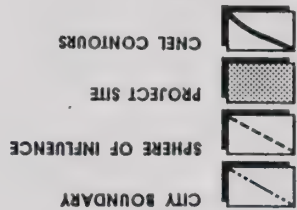


FIGURE 11-F-6
PROPOSED WEST BASIN
PROCESSING PLANT-
ATTENUATED CNEL
NOISE CONTOURS

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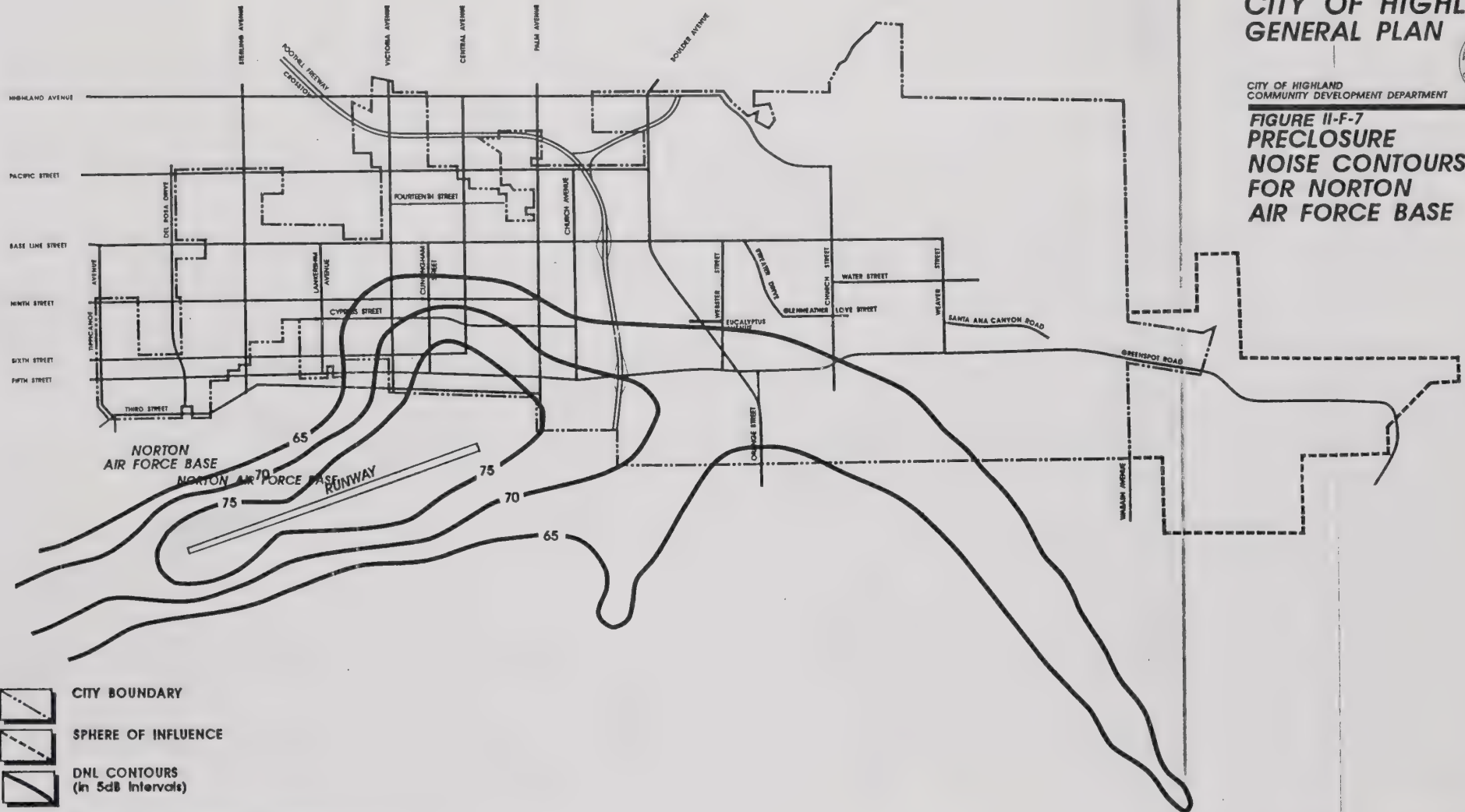
The seal of the City of Highland is circular. It features a central illustration of a mountain range with a river flowing in front of it. The words "CITY OF HIGHLAND" are written in a circular border around the top, and "1961" is at the bottom.

CITY OF HIGHLAND GENERAL PLAN



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**FIGURE II-F-7
PRECLOSURE
NOISE CONTOURS
FOR NORTON
AIR FORCE BASE**



-  CITY BOUNDARY
-  SPHERE OF INFLUENCE
-  DNL CONTOURS
(in 5dB intervals)

SOURCE: DRAFT ENVIRONMENTAL IMPACT STATEMENT,
DISPOSAL & REUSE OF NORTON AIR FORCE BASE, JANUARY 1992.

PLANNING NETWORK



**FIGURE 11-F-8
NOISE CONTOURS
FOR PROPOSED REUSE
OF NORTON
AIR FORCE BASE**



PLANNING NETWORK



Proposed Norton Air Force Base Reuse Plan

Aircraft noise associated with the Norton Air Force Base would be less under the proposed plan than prior to base closure. The Inland Valley Development Agency (IVDA) has selected reuse of the primary portion of the installation as a civilian airport and office industrial park as the proposed plan. Primary components of the aviation portion of the plan include air passenger operations, air cargo operations, general aviation operations, and maintenance operations. Non-aviation land uses include office industrial park, commercial, and recreational lands. Approximately 780 acres would be exposed to L_{dn} of 65 decibels or greater by the year 2005. Six existing residences would be within this area. Nine people currently reside in those units. The area exposed to L_{dn} of 65 dBA or greater would decrease to about 300 acres by 2015, when new, quieter aircraft would predominate. This contrasts with about 7,300 acres exposed to those noise levels under pre-closure conditions.

Foothill Freeway Noise Impacts

In the Final Environmental Impact Report (July 1973) for the Foothill Freeway through Highland, several sensitive noise receptors that would be impacted by the new freeway were identified:

- The First Methodist Church, located at Baseline and Buckeye Streets. The expected external sound level generated by the freeway will be $55+6$ dBA. This was estimated to be considerably less than existing peak sound levels of 68 dBA and average existing peak sound level of 63 dBA, generated by local traffic along Base Line.
- The Highland Congregational Church, located at the northeast corner of Atlantic and Palm Avenues, just north of the Highland city limits. The freeway will be depressed at this location, with off-ramp traffic generating external sound levels of $61+6$ dBA. Existing peak sound levels were measured at 73 dBA and average peak levels of 62 dBA along Palm Avenue. The church appeared to be fully air-conditioned and it can, therefore, be assumed that the external sound level will be reduced 23 to 28 dBA inside.
- Thompson Elementary School, located at 7401 Church Avenue, was projected to receive exterior freeway sound levels of $54+6$ dBA. A 10-15 dBA reduction can be applied from the exterior level to establish an interior level, therefore, Thompson Elementary School will fall below the 50 dBA requirement.

There were four residential locations identified in the Environmental Impact Report, which required sound attenuating devices.

- The freeway will be elevated through the residential area located between Valaria Drive and Victoria Avenue. Predicted sound levels of $77+6$ dBA were estimated, with sound attenuating devices lowering the freeway sound level to below 70 dBA.

Noise

- The freeway is to be depressed through the residential development lying north of Base Line and west of the new freeway. Sound levels from the freeway were estimated to be 80+6 dBA, with attenuating devices lowering the sound level to below 70 dBA.
- Freeway produced sound levels were estimated to be as high as 77+6 through the area north of Base Line and east of the depressed Route Foothill Freeway. Attenuating devices will be provided for that portion exceeding 70 dBA, which will lower the sound level.
- The freeway will be depressed through the residential area that is located east of the proposed freeway and south of Base Line. Freeway produced sound levels will be 73+6 dBA, reduced through attenuating devices to 70 dBA.

One additional residential area was projected to experience noise levels exceeding 70 dBA, but will not receive sound attenuating devices. This area was constructed after the freeway route adoption with full knowledge of the planned freeway.

- Northern half of the residential area located west of the freeway and north of Base Line. This section of the freeway will be depressed, and some earthmounding at the top of it may be feasible in order to partially shield these homes.

A Noise Attenuation Report for the freeway was redone in December 1988. It found that:

- Ambient noise levels at representative receivers adjacent to the project alignment vary from 40 to 60 dBA Leq. An average ambient level in the low 50s can be assumed for the Route 30/330 connection.
- Predicted freeway traffic, excluding local traffic, noise levels for the year 2010 vary from 45 to 70 dBA Leq. Those locations with noise levels in excess of 67 dBA will be attenuated to less than 67 dBA. Other locations with substantial noise increases above ambient levels will also be considered for attenuation.
- Attenuation will be achieved through the use of noise barriers located at the roadbed hinge point, top of cut, or along the right-of-way.

Sound Propagation

Highway traffic noise on high volume roadways simulates a "line source" and the drop-off rate of sound with distance approaches "cylindrical spreading" wherein a nominal 3.0 dBA drop with each doubling of distance between the noise source and the noise receiver occurs.

Environmental factors such as the wind direction and speed, temperature gradients, the characteristics of the ground (hard or soft) and the air (relative humidity), the presence of grass, shrubbery, and trees, often combine to increase the actual attenuation achieved outside laboratory conditions to 4.5 decibels per doubling of distance. Thus, a noise level of 74.5 decibels at 50 feet from a highway centerline would attenuate to 70.0 decibels at 100 feet, 65.5 decibels at 200 feet, and so forth.

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This is particularly true where the view of the roadway is interrupted by isolated buildings, clumps of bushes, scattered trees, or the intervening ground is soft or covered with vegetation and the source of receiver is located more than 3 meters above the ground. It should be noted, however, that the nominal value of 3.0 dBA with doubling applies to sound propagation from a "line source": over the top of a barrier greater than 3 meters in height, or when there is a clear unobstructed view of the highway, the ground is hard, there are no intervening structures, and the height of the line-of-sight averages more than 3 meters above the ground.¹

In an area which is relatively flat and free of barriers, the sound resulting from a single "point source" of noise spreads in a spherical manner away from the source and drops by 6 decibels for each doubling of distance or 20 decibels for each factor of ten in distance. This applies to fixed noise sources and mobile noise sources which are temporarily stationary such as an idling truck or other heavy duty equipment operating within a confined area (such as industrial processes).

Other Considerations

The noise levels adjacent to line sources of noise such as roadways increase by 3.0 dBA with each doubling in the traffic volume (provided that the speed and truck mix do not change). From the mathematical expression relating increases in the number of noise sources (motor vehicles) to the increase in the adjacent noise level, it can be shown that a 26 percent increase in the traffic volume will cause a 1.0 dBA increase in adjacent noise levels. Doubling the number of vehicles on a given route increases the adjacent noise levels by 3.0 dBA, but changing the vehicle speed has an even more dramatic effect.

Increasing the vehicle speed from 35 to 45 miles-per-hour raises the adjacent noise levels approximately 2.5 dBA. Reducing vehicle speeds from 35 to 30 miles-per-hour decreases adjacent noise levels by 1.5 dBA on major roadways and 1.6 dBA on secondary and collector roadways. A speed decrease from 40 miles-per-hour to 35 miles-per-hour reduces adjacent noise levels by 1.3 dBA on majors and 1.4 dBA on secondaries and collectors. Consequently, lowering motor vehicle speeds can have a significant positive impact in terms of reducing adjacent noise levels.

The truck mix on a given roadway also has a significant effect on the adjacent noise levels. As the number of trucks increases and becomes a larger percentage of the total vehicle volume, the adjacent noise levels increase. This effect is more pronounced if the number of heavy duty (3+ axle) trucks is large when compared to the number of medium duty (2 axle) trucks.

Noise levels adjacent to roadways vary with the volume of traffic, the mean vehicular speed, the truck mix, and the road cross-section. Figures II-F-11 through 9 and II-F-10 provide a nomograph for each roadway type which allows the CNEL at either 50 or 100 feet to be determined from the daily two-way traffic volume and the speed of the vehicles. For example, a major roadway carrying 24,000 ADT with a posted speed limit of 40 miles-per-hour would generate approximately 67.4 CNEL at 100 feet. Lowering the speed to 35 miles-per-hour reduces the CNEL at 100 feet by 1.4 dBA to 66.0 dBA. At a speed of 45 miles-per-hour, the noise level at 100 feet would be 68.7 CNEL (1.3 dBA higher than at 40 miles-per-hour).

¹ Source: California Department of Transportation, "Noise Manual," 1980.

Figures II-F-11, II-F-12, II-F-13, and II-F-14 provide design noise levels adjacent to typical collector streets, major highways, secondary highways, and arterials. The nomographs assume traffic volumes equivalent to the daily design capacity for each roadway type as well as typical design speeds. These exhibits can be used as a general guide for planning purposes to determine the potential "worst case" future noise levels and the setbacks needed to insure an acceptable noise environment for the land uses being planned.¹

Table II-F-5
Interior/Exterior Noise Level Standards -- Mobile Noise Sources

Categories	Uses	Interior ¹	Exterior ²
Residential	Single and multi-family, duplex, mobile homes	45	60 ³
Commercial	Hotel, motel, transient lodging	45	60 ³
	Commercial retail, bank, restaurant	50	NA
	Office building, research and development, professional offices	45	65
	Amphitheater, concert hall, auditorium, movie theater	45	NA
Institutional/ Public	Hospital, nursing home, school classroom, church, library	45	65
Open Space	Park	NA	65

Source: San Bernardino County General Plan

¹ Indoor environment excluding: bathrooms, kitchens, toilets, closets, and corridors.

² Outdoor environments limited to:

private yard of single family dwellings	Park picnic areas
Multi-family private patios or balconies	School playgrounds
Mobile home parks	Hotel and motel recreation areas
Hospital/office building patios	

³ An exterior noise level of up to 65 dBA (or CNEL) will be allowed provided exterior noise levels have been substantially mitigated through a reasonable application of the best available noise reduction technology, and interior noise exposure does not exceed 45 dBA Ldn (or CNEL) with windows and doors closed. Requiring that windows and doors remain closed to achieve an acceptable interior noise level will necessitate the use of air conditioning or mechanical ventilation.

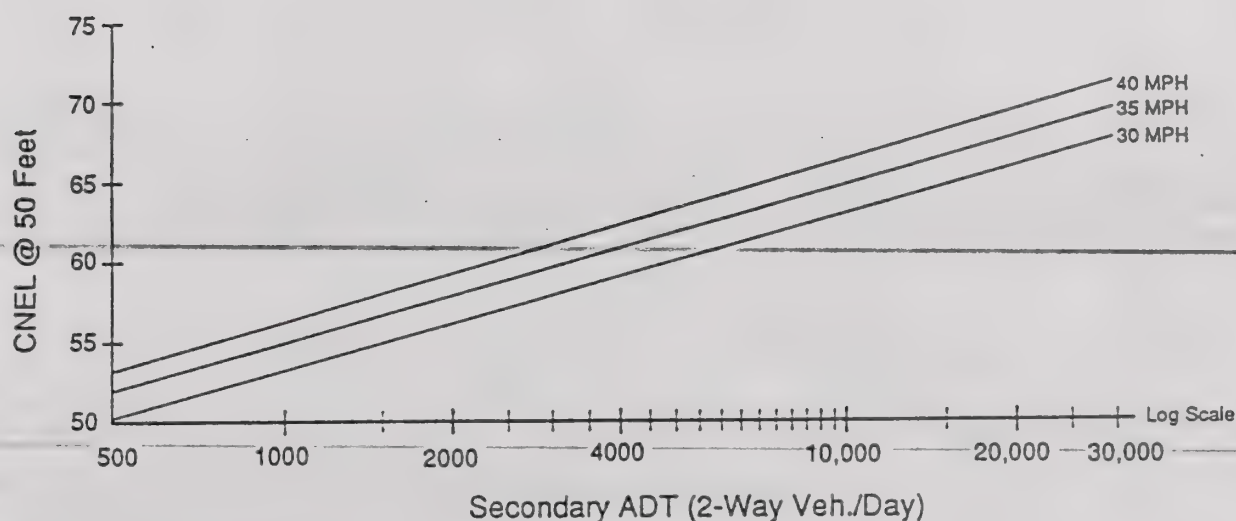
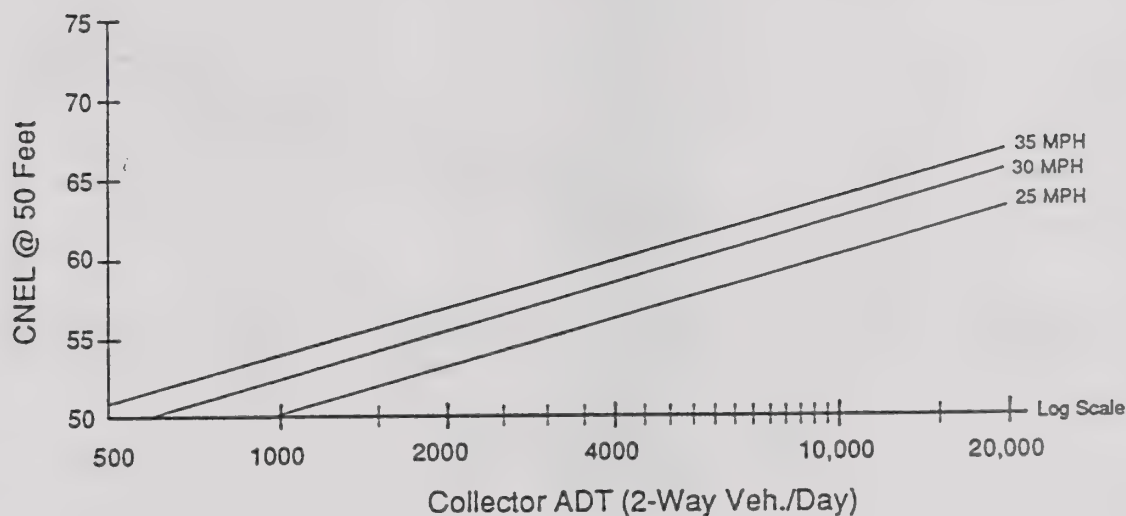
¹ The daily design capacities assumed included 24,000 vehicles per day (VPD) for majors and arterials, 20,000 VPD for secondaries and 12,000 VPD for collectors.

CITY OF HIGHLAND GENERAL PLAN

CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT



FIGURE II-F-9
TYPICAL NOISE LEVELS
VERSUS SPEED &
VOLUME



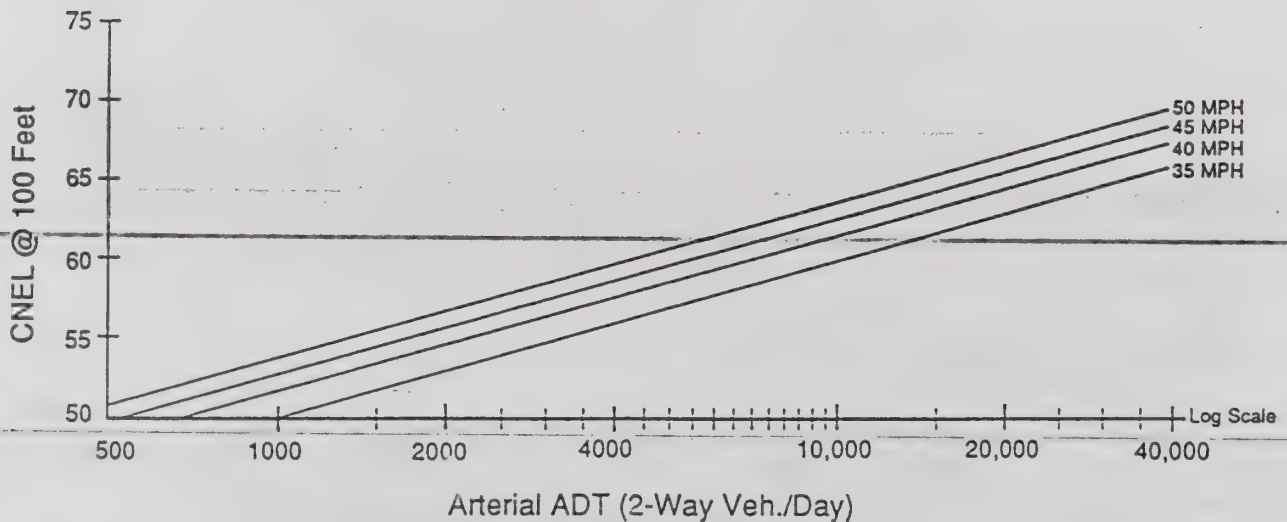
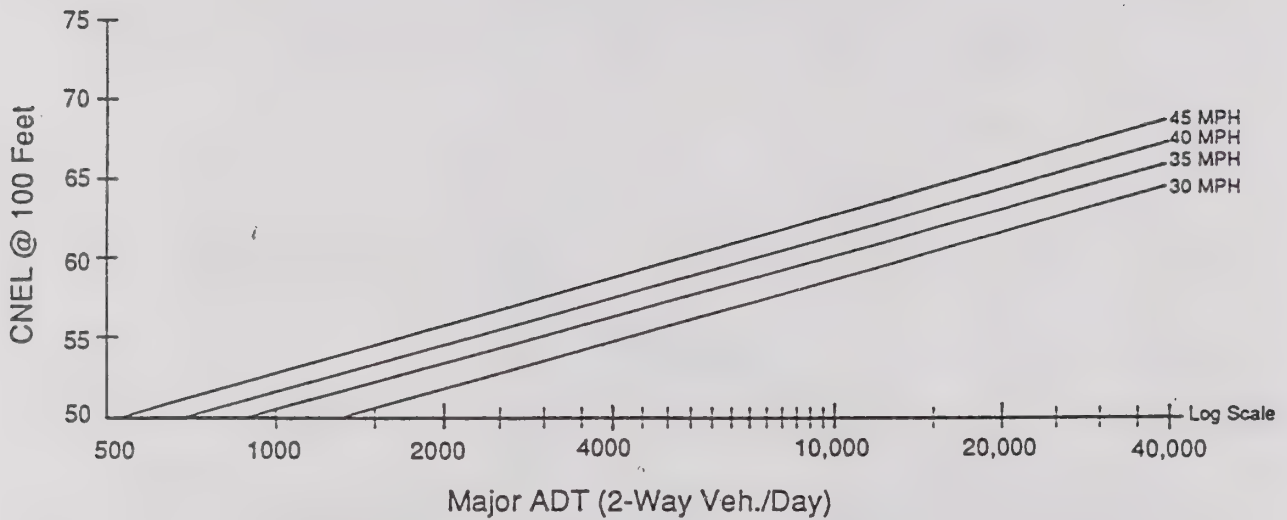
SOURCE: ENDO ENGINEERING, 1992.

CITY OF HIGHLAND GENERAL PLAN

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COMMUNITY DEVELOPMENT DEPARTMENT



**FIGURE II-F-10
TYPICAL NOISE LEVELS
VERSUS SPEED &
VOLUME**



SOURCE: ENDO ENGINEERING, 1992.

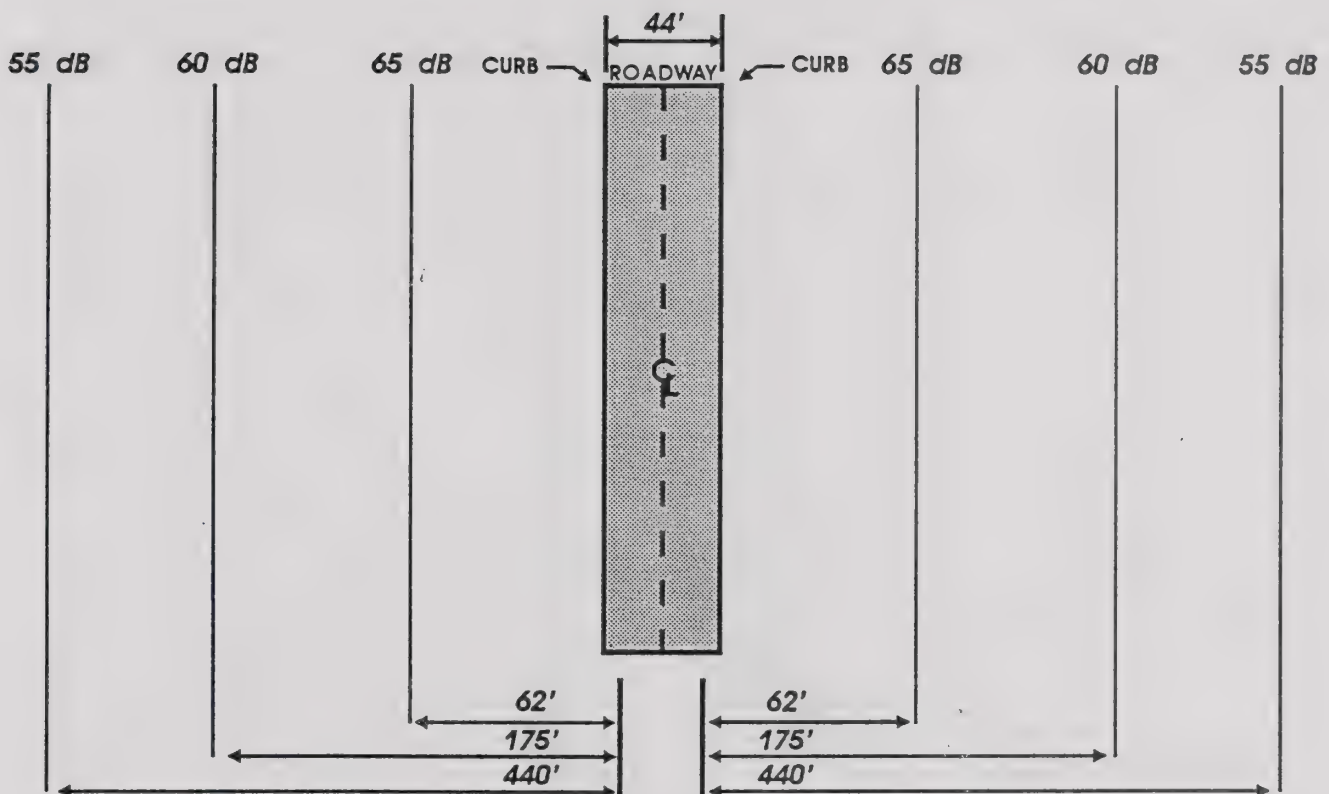
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FIGURE II-F-11
TYPICAL
NOISE CONTOURS
COLLECTOR



TRAFFIC FLOW PARAMETERS	
DAY NIGHT SPLIT:	87%-13%
PERCENT HEAVY TRUCKS:	4%
TYPICAL SPEEDS:	35-45 MPH
ROADWAY CONFIGURATION:	2 OR 4 LANES
BUILD OUT CAPACITY AT LOS (C):	12,000 VPD

NOTE: DISTANCE TO NOISE CONTOUR IN FEET ARE MEASURED FROM
CENTER OF OUTERMOST TRAFFIC LANE.

SOURCE: OFFICE OF NOISE CONTROL, STATE DEPARTMENT OF HEALTH, 1975.

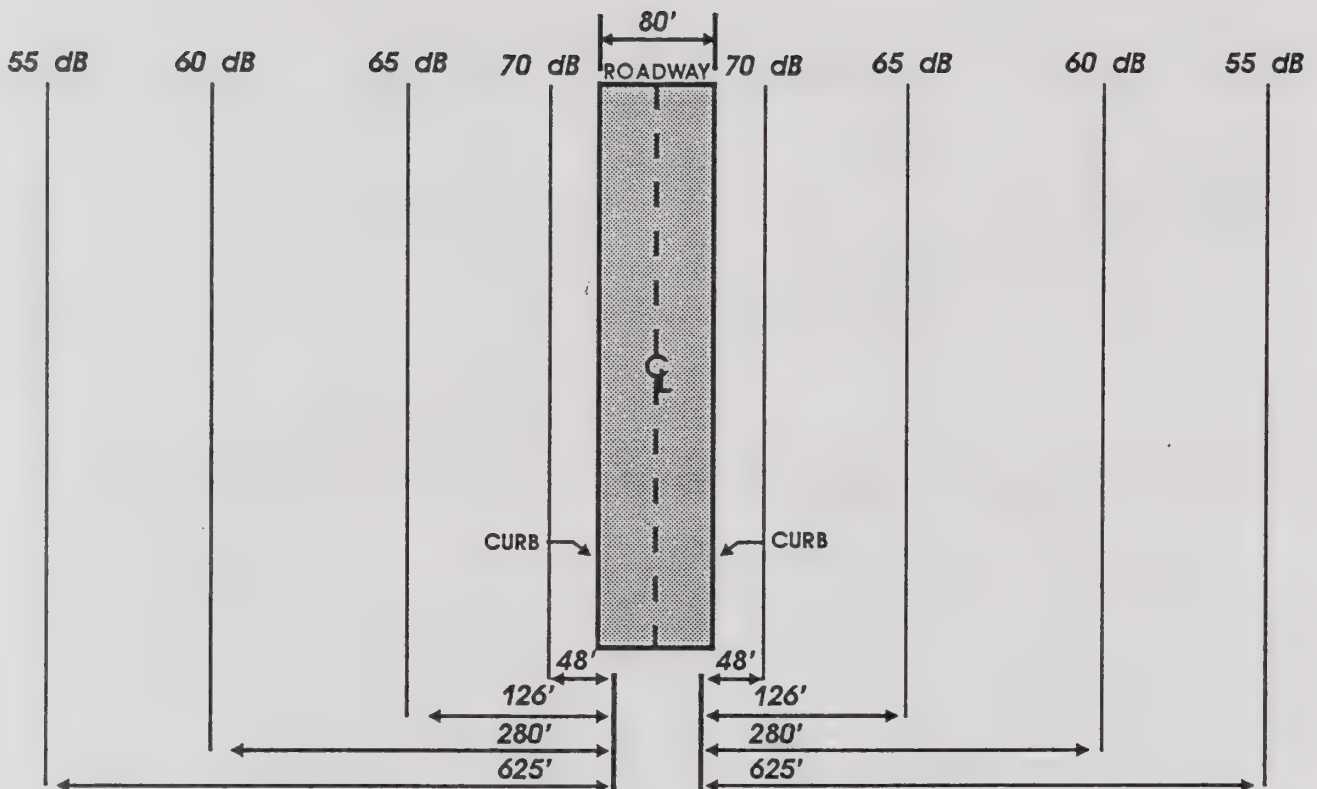
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**FIGURE II-F-12
TYPICAL
NOISE CONTOURS
MAJOR HIGHWAY**



TRAFFIC FLOW PARAMETERS

DAY NIGHT SPLIT:	87%-13%
PERCENT HEAVY TRUCKS:	4%
TYPICAL SPEEDS:	35-45 MPH
ROADWAY CONFIGURATION:	4 OR 6* LANES
BUILD OUT CAPACITY AT LOS (C):	24,000 VPD

* BUILDOUT AT 6 LANES WILL PRODUCE A -1dB ADJUSTMENT.

NOTE: DISTANCE TO NOISE CONTOUR IN FEET ARE MEASURED FROM
CENTER OF OUTERMOST TRAFFIC LANE.

SOURCE: OFFICE OF NOISE CONTROL, STATE DEPARTMENT OF HEALTH, 1975.

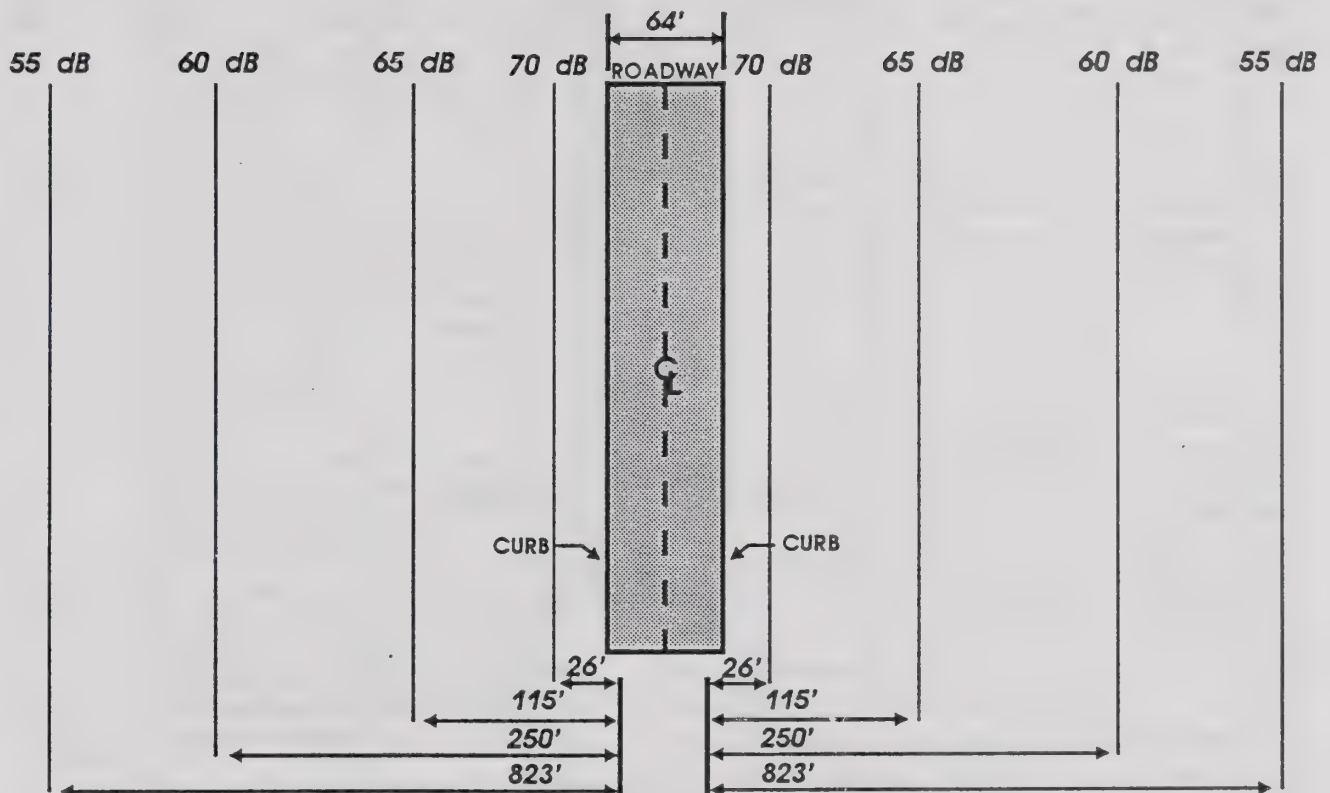
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**CITY OF HIGHLAND
GENERAL PLAN**



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-F-13
TYPICAL
NOISE CONTOURS
SECONDARY HIGHWAY**



TRAFFIC FLOW PARAMETERS	
DAY NIGHT SPLIT:	87%-13%
PERCENT HEAVY TRUCKS:	4%
TYPICAL SPEEDS:	35-45 MPH
ROADWAY CONFIGURATION:	2 OR 4 LANES
BUILD OUT CAPACITY AT LOS (C):	20,000 VPD

NOTE: DISTANCE TO NOISE CONTOUR IN FEET ARE MEASURED FROM
CENTER OF OUTERMOST TRAFFIC LANE.

SOURCE: OFFICE OF NOISE CONTROL, STATE DEPARTMENT OF HEALTH, 1975.

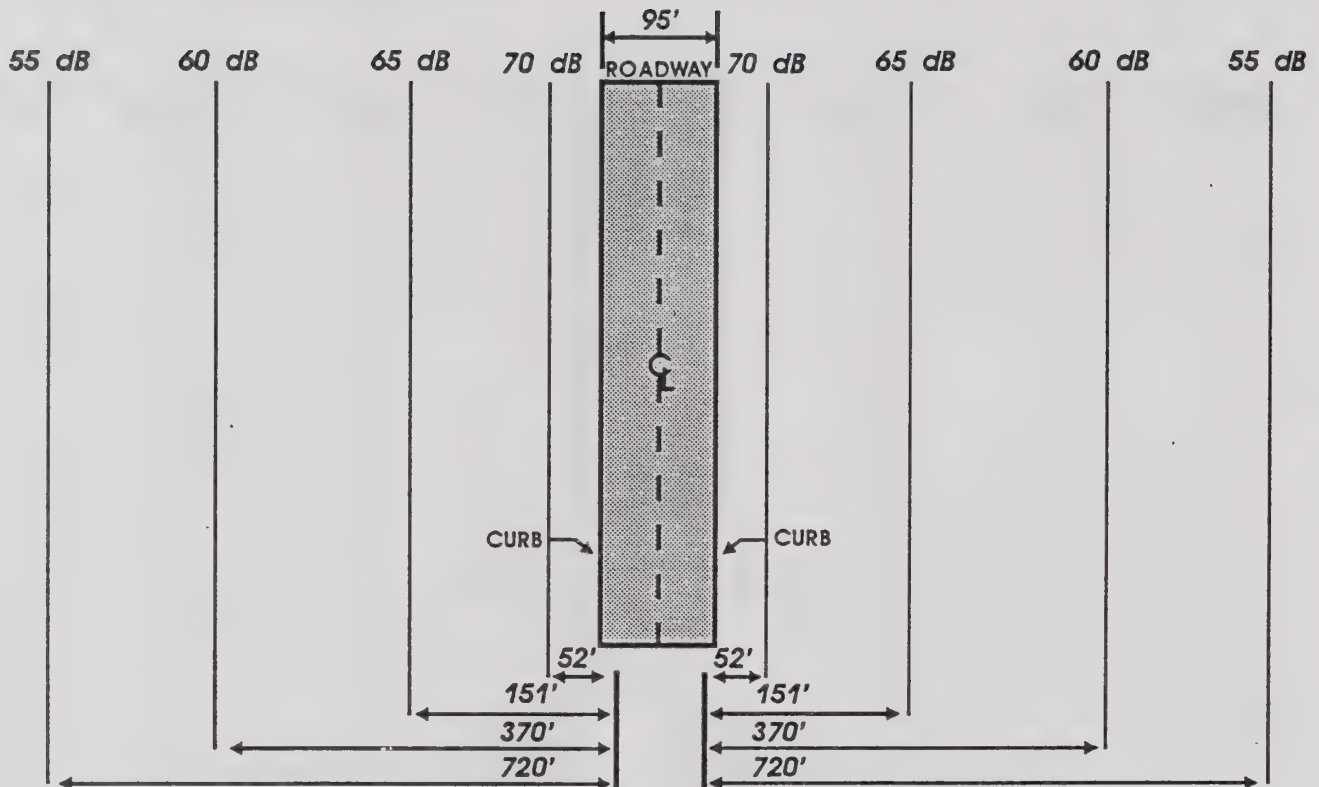
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**FIGURE II-F-14
TYPICAL
NOISE CONTOURS
PRIMARY ARTERIALS**



TRAFFIC FLOW PARAMETERS

DAY NIGHT SPLIT:	87%-13%
PERCENT HEAVY TRUCKS:	4%
TYPICAL SPEEDS:	35-45 MPH
ROADWAY CONFIGURATION:	4 OR 6* LANES
BUILD OUT CAPACITY AT LOS (C):	38,000 VPD

* BUILDOUT AT 6 LANES WILL PRODUCE A -1dB ADJUSTMENT.

NOTE: DISTANCE TO NOISE CONTOUR IN FEET ARE MEASURED FROM
CENTER OF OUTERMOST TRAFFIC LANE.

SOURCE: OFFICE OF NOISE CONTROL, STATE DEPARTMENT OF HEALTH, 1975.

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 1: To protect citizens of Highland from the harmful and annoying effects of exposure to excessive noise, and the encroachment of incompatible land uses within areas affected by existing noise-producing uses.					
Objective 1.1: Incorporate noise issues into the land uses planning and permitting process to ensure that noise generated by one use or facility does not adversely affect adjacent uses.					
1.1.1	Prevent the location of new residential development within the 65 CNEL noise contour of Norton Air Force Base and the mining reclamation operations of the Santa Ana River, unless appropriate mitigation is provided to maintain acceptable noise levels.	Ongoing	Existing Program	Community Development	Department Budget, Development Fees
1.1.2	Establish and maintain a maximum acceptable outdoor noise level for noise sensitive residential activity areas ¹ of 65 dBA CNEL. Where residential areas are to be located adjacent to roadways producing CNEL level in excess of 65 dBA, ensure that adequate mitigation is provided.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.3	Utilize the noise standards in Table II-F-5 for design purposes in new development and establish a program to attenuate existing noise problems.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.4	The daily design capacity as outlined in the Highland General Plan and the posted speed limit shall be utilized to quantify the design noise levels adjacent to master planned transportation routes for mitigation purposes.	Ongoing	New Program	Community Development	Department Budget
1.1.5	Where new development is proposed within areas where the exterior or interior noise levels outlined in Table II-F-5 are likely to be exceeded, require a detailed noise analysis to be prepared to determine appropriate mitigation and incorporate such mitigation into the project design.	On case-by-case basis depending on exceedence of noise standards	New Program	Community Development	Department Budget, Development Fees

¹ Noise sensitive residential activity areas include patios, balconies, pool areas, cook-out areas, and recreational areas, but shall not include front yards.

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.1.6	Enforce California Noise Insulation Standards ¹ which apply to new multiple family development within a 60 CNEL noise contour adjacent to roads, transit lines, and manufacturing areas to ensure that the units have been designed to limit interior noise levels in habitable rooms to 45 CNEL with doors and windows closed.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.7	Work with area school districts to ensure that schools are located and designed so that interior noise levels in classrooms do not exceed 45 CNEL, and that noise exposure does not exceed 65 CNEL at classroom buildings and 70 CNEL on playgrounds and athletic fields.	Ongoing	New Program	Community Development	Department Budget
1.1.8	When proposed projects include potentially significant noise generators, require noise analyses to be prepared by an acoustical expert, including specific recommendations for mitigation when 1) the project is located in close proximity to noise sensitive land uses or land which is planned for noise sensitive land uses, or 2) the proposed noise source could violate the noise provisions of the General Plan or City ordinance.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.9	For purposes of consistency, require that noise reports incorporate the following methodology: - Assume three (3) dBA attenuation with doubling of distance for the natural attenuation of noise emanating from roadways (with the exception of freeways where a 4.5 dBA attenuation with doubling of distance may be utilized). - Use the design capacity of roadways as outlined in the Circulation Element and the posted speed limit to quantify the design noise levels adjacent to master planned transportation routes for mitigation purposes.	Ongoing	New Program	Community Development	Department Budget, Development Fees

¹ Section 1092, Title 25, California Administrative Code.

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
1.1.10 Incorporate mitigation of motor vehicle noise impacts from streets and highways into roadway design through the following techniques: • Consideration shall be given to the location of truck routes, effects of truck mix, posted speed limits, and future motor vehicle volumes on noise levels adjacent to master planned roadways when improvements to the circulation system are planned. • Traffic volumes through residential neighborhoods shall be minimized. • Require evaluation of highway and arterial roadway extensions for potential noise impacts on existing and future land uses in the area.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.11 Manage the generation of single event noise levels from motor vehicles, trains, aircraft, commercial, industrial, construction, and other activities such that SENEL levels are no greater than 15 dBA above the noise objectives included in the Plan for Public Health and Safety, wherever feasible.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.12 Review and respond to any proposals involving new flight patterns, more intense operations over the City, or relocation or extension of runways which would create the potential for noise impacts on sensitive land uses within the City in a manner consistent with other noise policies contained herein.	Ongoing	New Program	Community Development	Department Budget
1.1.13 Ensure that the design and placement of air conditioning units and pool equipment within residential areas is accomplished in a manner which does not intrude upon the peace and quiet of adjacent noise sensitive uses.	Ongoing	Enhancement of Existing Program	Community Development	Department Budget, Development Fees
1.1.14 As a condition of approval, limit non-emergency construction activities adjacent to existing noise-sensitive uses to daylight hours between 6:00 a.m. and 7:00 p.m.	Ongoing	New Program	Community Development	Department Budget, Development Fees

Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
1.1.15 When site and architectural design features cannot sufficiently reduce adverse noise levels, or cannot economically be provided, require the provision of noise barriers, noise berms, or barriers and berms in combination. - Noise barriers must be massive enough to prevent significant noise transmission and high enough to shield the receiver from the noise source. - The minimum acceptable surface weight for a noise barrier shall be four (4) pounds per square foot (equivalent to 3/4" plywood). - The barrier must be carefully constructed so that there are no cracks or openings. - The barrier must interrupt the line-of-site between the noise source and the noise receiver. - The effects of flanking should be minimized by bending the barrier back from the noise source at the end of the barrier. (Flanking is a term used to describe the manner by which the performance of a noise barrier is compromised by noise passing around the end of the barrier).	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.16 Require landscaping treatment to be provided in conjunction with noise barriers to provide visual relief and to reduce aesthetic impacts.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.17 Guide the location and design of transportation facilities in order to minimize the effects of noise on adjacent land uses.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.18 Require homeowners in the vicinity of the gun club to inform new buyers of the existence of potential noise impacts associated with gunfire.	Ongoing	New Program	Community Development	Department Budget, Development Fees
1.1.19 Set up a noise complaint file to document areas of excessive noise in the City.	Set up file 6 months post General Plan adoption	New Program	Community Development	Department Budget

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HOUSING

Introduction

Purpose and Function

The purpose of the Housing Element is to identify local housing problems and needs and to identify measures necessary to mitigate and alleviate these needs and problems for all economic segments of the community. The key purpose of the Housing Element is to contribute to meeting the State housing goals as stated below:

"The availability of housing is of vital statewide importance, and the early attainment of decent housing and a suitable living environment for every California family is a priority of the highest order." (Government Code Section 65581).

The Legislature has further determined that local governments:

"... have a responsibility ... to make adequate provision for the housing needs of all economic segments of the community."

The Highland Housing Element was prepared in conformance with State housing law (Government Code Sections 65580-65589). This document provides residents of the community and local government officials with a greater understanding of the housing needs in Highland and guidance to the decision-making process in all matters relating to housing.

Section 65300.5 of the Government Code states that the general plan shall comprise an integrated, internally consistent set of policies. The Highland Housing Element is a compilation of population and land use information used in other elements of the General Plan. Thus, the structure of this Plan is built on the same consistent foundation upon which all other elements of the Plan were formed. In addition, the housing element goals, objectives and strategies complement the goals, objectives and strategies found in the other elements of the General Plan. Through this coordination, cohesive housing policies that are appropriate to Highland were designed. Lastly, the General Plan requires an annual review and report to examine amendments and determine their consistency with the Plan.

The goal for the City of Highland is to ensure that housing is provided for all residents in the community by preserving existing dwelling units, as well as encouraging appropriate new residential developments.

Legal Requirements

Section 65588(a) requires that the City periodically review the housing element in order to evaluate:

- The appropriateness of the housing goals, objectives, and strategies, in contributing to the attainment of the State housing goal;
- The effectiveness of the housing element in attainment of the community's housing goals and objectives; and

Housing

- The progress of the City in implementing the housing element.

The legislation also requires an update of the housing element every five years, or more frequently, to reflect updated conditions. By incorporating this needs assessment, Highland's Housing Element can monitor how well the established five-year goals, policies, and programs have met the housing needs of the community. After adoption of Highland's first Housing Element, another revised element is mandated by July 1, 1994.

The current Housing Element law requires an evaluation of previous City housing elements (Government Code Section 65588(a) and (b)). The City of Highland incorporated in 1987; therefore, there is no housing element to compare to. The 1990 Census has provided the basis for quantified analysis required for the Housing Element.

Citizen Participation

State housing element law requires that:

" ... local government make a diligent effort to achieve public participation of all economic segments of the community in the development of the housing element."

The Housing Program is a product of time and effort expended by the General Plan Advisory Committee. Elected officials appointed this citizen committee to identify issues in the City. At the beginning of the General Plan Process, numerous interviews were held with Community leaders to provide input to the General Plan Advisory Committee Citizen Concerns. The General Plan Advisory Committee met for several months on a regular basis. In addition, the land use and housing elements underwent workshops and hearings. This information has been documented in the Community Issues Report.

Population

A successful strategy for improving housing conditions must be based on an assessment of the housing needs of existing residents and expected growth. Since changes in the City do not occur in a vacuum, comparisons are made to San Bernardino County. Recent demographic information is based on the 1990 Census. Due to the recent incorporation of Highland in 1987, data prior to the 1990 Census was taken from Urban Decision Systems estimated demographic information.

Population Growth Trends

To successfully provide a housing program, an assessment of the population, through population growth and characteristics, is needed. The City of Highland, and San Bernardino County as a whole, have grown continually since 1970. The estimated population for Highland in 1980 was 23,073, and by 1990, 34,439 people resided in Highland, a 49 percent increase. This percentage increase in population is similar to growth trends in San Bernardino County, where population has grown 58 percent from 1980 to 1990 (see Table II-G-1). It is projected that buildout population for the City will be 61,804.

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Table II-G-1
Population Growth

	1980 Population	1990 Population	Percent Increase
San Bernardino County	895,016	1,418,380	58%
City of Highland	23,073 ¹	34,439	49%

Source: 1980 and 1990 U.S. Census.

¹ Urban Decision Systems, 1991.

The population increase in the Highland area was primarily due to the housing boom in the early to mid 1980s. As vacant land suitable for housing in Los Angeles and Orange Counties became scarce and more expensive, growth spilled over into San Bernardino County.

Population Characteristics

Age and Sex Distribution

In addition to overall growth, the character of the population has changed. It is important for planning social services and housing in the City over the next decade to analyze the population in terms of age. Although the population in Highland has increased by 49 percent between 1980 and 1990, age distribution has changed very little since 1980. Age distribution in 1990 (see Table II-G-2) depicts 26 percent of the population as aged 0-13; 62 percent of the population is between the ages 0-34. Over three quarters of the population is under the age of 44. Three age groups have increased their representation in the population from 1980 to the present, 0-5, 25-34, and 35-44. This increase is likely due to new families moving into the area. This concept of an influx of new, young families is reinforced by the 3.39 persons per family indicated by the 1990 Census. It is also important to note the percent of the City's population within the 18-24 age group. This represents a component of the population of child bearing age who will require housing in the future. All other age groups in the City have either remained the same, age groups 6-13 and 45-54, or have slightly decreased, 14-17, 18-20, 21-24, 55-64, and 65+. Median age for residents of Highland was 28.4 in 1990.

Table II-G-2
Age Distribution

Age	1980		1990	
	Number	Percent	Number	Percent
0 - 5	2,459	11%	4,233	12%
6 - 13	3,151	14%	4,836	14%
14 - 17	1,689	7%	2,209	6%
18 - 20	1,339	6%	1,531	4%
21 - 24	1,928	8%	2,163	6%
25 - 34	3,883	17%	6,519	20%
35 - 44	2,616	11%	5,300	15%
45 - 54	2,097	9%	3,029	9%
55 - 64	1,842	8%	2,374	7%
65 +	2,069	9%	2,245	7%
Total	23,073	100%	34,439	100%

Source: 1980 and 1990 U.S. Census, Urban Decision Systems Estimate.

Table II-G-3 shows the breakdown of the population in terms of sex. The preponderance of females in the elderly population indicates that females tend to live longer than males, a national trend.

Table II-G-3
Sex Distribution

	1980		1990	
	Number	Percent	Number	Percent
MALE	11,238	--	16,866	--
0 - 20	4,411	39%	6,501	39%
21 - 44	4,131	37%	6,807	40%
45 - 64	1,871	17%	2,693	16%
65 +	825	7%	865	5%
FEMALE	11,835	--	17,573	--
0 - 20	4,226	36%	6,308	36%
21 - 44	4,293	36%	7,175	41%
45 - 64	2,069	18%	2,710	15%
65 +	1,247	10%	1,380	8%
Total	23,073		34,439	

Source: 1980 and 1990 U.S. Census, Urban Decision Systems.

Ethnicity

The racial and ethnic characteristics of the City have changed significantly since 1980 (see Table II-G-4). San Bernardino County has seen an influx of Asian and Hispanic immigrants which is duplicated in the City of Highland. In the 1980 Census, the area of the County in which Highland is located, the East Valley area, was one of the top two areas in the County showing the greatest increase in the number and percentage of minority persons. The greatest increase in the City has been for Hispanics, which almost doubled in percentage from 14 to 22 percent of the population. Asian and Blacks increased by almost the same percentage, three and four percent, respectively. These percentages are likely to continue to increase through the 1990s, following trends in Southern California.

Table II-G-4
Ethnicity

	1980		1990	
	Number	Percent	Number	Percent
White	20,202	88%	25,201	73%
Black	1,657	7%	3,778	11%
American Indian	350	2%	362	1%
Asian/Pacific Islander	550	2%	1,664	5%
Other	314 ¹	1%	3,434	10%
TOTAL	23,073		34,439	
Spanish/Hispanic ²	3,327	14%	7,695	22%

Source: 1980 and 1990 U.S. Census

¹ 1980 "Others" race modified to current Census Bureau definition.

² Includes people who may have listed themselves in one of the above categories.

Employment

Employment is a reflection of education levels. According to the 1990 Census, in the City of Highland, 72 percent of the people over eighteen years old had attained a high school diploma or above. Twenty-one percent had either an associated degree, bachelor's degree, or a graduate/professional degree. The 1990 Census indicates that a total of 14,453 residents of Highland were employed in the civilian labor force, and 564 people were employed in the armed services, while 1,424 residents were unemployed. Total employment in 1988 in the two-county Riverside-San Bernardino Primary Metropolitan Statistical Area (PMSA), amounted to approximately 856,000 jobs. Employment types were broken down as follows: 25 percent was in the services sector, 19 percent in government, 18 percent in retail trade, 10 percent in manufacturing, 9 percent in construction, and the remaining 19 percent in other sectors. Communities surrounding Norton Air Force Base, of which Highland is one, are slightly more dependent upon military employment than the nation as a whole. Over the past 20 years, however, this dependency on military employment has been declining as a result of large increases in civilian sector jobs. This will decrease even further with the closure of Norton Air Force Base in 1994.

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The largest percentage of civilian employed people in Highland have technical, sales, and administrative occupations (see Table II-G-5).

Table II-G-5
Occupation of Employed Persons

	City of Highland	
	Number	Percent
Managerial/Professional	3,019	21 %
Technical, Sales, Administration	4,677	32 %
Services	2,251	16 %
Farming, Forestry, Fishing	260	2 %
Precision, Production, Craft, Repair	2,059	14 %
Operations, Fabrication, Laborers	2,187	15 %
Total	14,453	100 %

Source: 1990 U.S. Census

Effects of Growth

The effects of projected population growth within the City of Highland include increases in the following areas:

- demand for public and private services and facilities;
- consumption of resources, including an increased demand for water;
- demand for housing which is affordable to a broad range of income groups;
- demand for local employment opportunities;
- traffic and related improvements to the circulation system;
- production of liquid and solid wastes, as well as generation of air pollutant emissions;
- loss of open space and agricultural land; and
- potential conflict between urban and rural communities and lifestyles.

Housing

It is the purpose of the General Plan to provide the City with the means to manage its future in such a manner that permits new growth and mitigates the potential negative impacts of growth.

Some of the effects of increased traffic congestion include a decrease in local air quality; lost worker hours spent commuting; increased fuel and transportation expenditures; an increase in the amount of employee stress, tardiness, and absenteeism; and less time available for leisure, recreation and family life. There is also concern in many communities that the advent of large commuter populations bring with it an array of social problems, such as a proliferation of 'latch key' children and alienation of a large segment of the population which does not have time for socialization or involvement in community affairs as a result of long commute times.

Housing

Along with population, housing construction in the City of Highland has greatly increased over the last decade. According to 1980 estimates, there were a total of 8,915 housing units in Highland and 12,562 in 1990, an increase of 41 percent. This is very close to the population increase of 49 percent over the same time period.

Composition of Housing Stock

The vacancy rate, referring to the number of vacant units which are for sale or rent as a percentage of the overall market was 10 percent in 1990, while the owner vacancy rate and renter vacancy rate estimates in 1980 were 2.7 and 10.5 respectively (Pg. 3-37 Norton Socioeconomic Study).

The housing stock in Highland grew very rapidly between 1980 and 1990. The proportion of housing composed of multi-family units increased, particularly structures containing five or more units (see Table II-G-6 and Table II-G-7).

**Table II-G-6
Composition of Housing Stock, 1980**

Units in Structure	Number	Percentage
1	6,035	68 %
2	158	2 %
3-4	925	10 %
5+	796	9 %
Mobile Home	999	11 %
Total	8,913	100 %

Source: Urban Decision Systems, 1991.

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Table II-G-7
Composition of the Housing Stock (1990)

	City of Highland	Percent
Single Family		
Detached	8,514	68%
Attached (1980)	298	2%
Multi Family		
Duplex	226	2%
3 - 4 Units	571	5%
5 to 20 Units	1,397	11%
20 or more Units	614	4.5%
Mobile Homes	873	7%
Other	69	.5%
Total Housing Units	12,562	100%

Source: 1990 U.S. Census

To a large degree, the type, or mix, of housing units within the City and the household characteristics of a community are reflections of each other. The unit mix in Highland has changed substantially between 1980 and 1990 (see Table II-G-6 and Table II-G-7). According to the 1990 Census, both structures with one housing unit, single family homes, and structures with 5 or more units increased, while the percentage of mobile homes and structures with 2 to 4 units both decreased.

Housing Price

The most influential factor in the growth of Highland has been the affordable housing market. During the 1980's many people moved to the City of Highland to take advantage of the lower housing values. The median housing price in the City in 1990 was \$101,500 which is 21 percent lower than San Bernardino County's median home value of \$129,200 (see Table II-G-8).

In February 1992, Multiple Listing Service indicated that of the 222 residential properties sold in the last six months (August 1991 through January 1992), the average cost was \$152,639 with a high cost of \$449,900, and a low cost of \$58,000. The higher average cost of housing is likely due to the relatively new luxury homes found in the East Highlands Ranch area.

Housing

Table II-G-8
Housing Price

Value Range	City of Highland		City of Highland		County of San Bernardino	
	1980		1990		1990	
	Number	Percent	Number	Percent	Number	Percent
\$0 - 24,999	325	9%	61	1%	1,894	1%
\$25,000 - 49,999	1,391	37%	109	2%	6,405	3%
\$50,000 - 99,999	1,886	50%	2,794	46%	67,886	27%
\$100,000 - 149,999	111	3%	1,543	26%	80,166	33%
\$150,000 - 199,999	30	.6%	790	13%	47,172	19%
\$200,000 +	16	.4%	734	12%	41,889	17%
TOTAL	3,759	100%	6,031	100%	245,412	100%
Median Value	\$52,859		\$101,500		\$129,200	

Source: 1980 U.S. Census and 1990 U.S. Census

Rents

The 1990 Census indicated that the median rent in Highland was \$509 and only 7.5 percent of apartments rent for less than \$300 (see Table II-G-9). In order to supplement the 1990 Census data on rent levels in the City of Highland, a brief rental survey was done in February 1992 using rental advertisements in the local newspaper (see Table II-G-10). The data indicates that single family residences rent for only slightly more than apartments, and that there is a lack of available apartment units larger than two bedrooms. This appears to point to a need for larger size multi-family rental units with more than two bedrooms in order to provide a greater variety of choice in the rental market of the City.

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Table II-G-9
City of Highland Rent Levels

Rents	1980		1990	
	Number	Percent	Number	Percent
Less than \$100	301	10%	21	.5%
\$100 - 199	946	32%	146	3%
\$200 - 299	1,408	47%	180	4%
\$300 - 399	288	9%	399	9%
\$400 - 499	50	1.8%	1,298	30%
\$500 +	7	.2%	2,289	53.5%
TOTAL	3,000	100%	4,333	100%
Median Rent	\$218		\$509	

Source: 1980 U.S. Census and 1990 U.S. Census.

Table II-G-10
Average Rent Levels (February 1992)

Unit Size (Number of Bedrooms)	Apartments	Single Family/ Condominiums
1	\$375	\$385
2	\$458	\$494
3	N/A	\$790
4	N/A	\$1,105
5	N/A	\$1,000

Source: *The Sun* Newspaper, February 9, 1992 and February 16, 1992, and the City of Highland Community Development Department.

Housing

Mobile Homes

Traditionally, local governments were reluctant to allow mobile home development for a number of reasons. Typical older mobile home developments were not aesthetically attractive, and were not well planned. Mobile homes historically not been subject to property taxes, and instead, has been registered and taxed as vehicles by the State Department of Motor Vehicles, thereby reducing their economic desirability to cities. Mobile homes are now subject to property taxation, which eliminates a major reason for the reluctance to permit mobile homes.

State legislation now requires that localities make provisions for the placement of mobile homes on permanent foundations on individual, single family zoned lots. State legislation (SB 2827) approved in 1988 deleted provisions of State law which formerly allowed local jurisdictions to restrict mobile homes to specific residential zones. In effect, this legislation requires jurisdictions to permit mobile homes in all residential zones. To ensure compatibility with single-family homes, SB 2827 allows localities to impose development standards requiring mobile homes to meet the same site development and design standards as conventional housing within the same zone.

One important characteristic associated with mobile homes is their relative affordability. Information was also collected on space rent in mobile home parks because of the significance they have in the City's housing stock. When taken together with the space rental cost, the survey suggests that mobile homes provide housing that is within the reach of moderate income households (see Table II-G-11). According to Table II-G-7, mobile homes constitute 7 percent of the City's housing stock.

Table II-G-11
Mobile Home Parks in Highland (1991)

Park Name	Average Rent/Space	Total Mobile Home/RV Lots	Number of Vacant Spaces	Vacancy Rate
Boulder Trailer Park ¹	NA	32	NA	NA
Fairway Mobilehome Estate	\$200	63	5	8%
Highlander Mobile Manor	\$185	85	3	4%
Lu-Wil Mobilehome Park	\$140	41	1	2%
Mobile Estates	\$220	143	3	2%
Palm Grove Trailer Court	\$165	45	1	2%
Silver Creek Mobilehome Park	\$200	65	5	8%
The Highlands Mobile Home Estates	\$324	215	0	0%
Victoria Palms Mobile Park ¹	NA	19	NA	NA
Average				

Source: California Department of Housing and Community Development, 1991.
City of Highland, Planning Department, February 1992.

¹ No longer existing.

Vacancy Rate

Vacancy, or the rate of occupied versus unoccupied units, is a widely used indicator of the relative health of housing markets. The availability of vacant units of suitable size and cost is an important factor in ensuring that residents are not overcrowded or forced to move to other areas. A vacancy rate of four to six percent in a mature community generally indicates a fairly stable housing market, while a slightly higher rate of five to seven percent is considered healthy for a growing community. Lower rates imply a market in which housing demand exceeds supply, while higher rates indicate an excess supply of units. Higher vacancy rates can occur for several reasons, such as rapid residential development which exceeds the rate of population growth, widespread economic distress, large numbers of substandard units, or a large amount of seasonal units.

According to Urban Decision System numbers, the vacancy rate in 1980 for the City of was 9.25 percent, while the 1990 Census figures show a 9.9 percent vacancy rate in the City. This slight increase may be due in part to a general slow down in home building. Along with this change in the housing market, according to the 1991 Draft supplement Environmental Impact Report on East Highlands Ranch, the East Highlands Ranch Planned Unit Development built approximately 700 single family units.

Housing

Household Characteristics

Although the characteristics of individual members of the population are important for an understanding of growth and change in the City, a more useful unit for analyzing housing needs is the household. The Census considers all people living in a dwelling unit as a household, whether or not they are related. A single person renting an apartment, as well as a family who own their home, are both considered households. People who live in retirement or convalescent homes, dormitories, military barracks, or prisons are not considered households.

Demographic studies have confirmed that as individuals age, their household arrangements and housing needs change. Children live with their parents through high school and occasionally college, and then move out to set up their own households. Young, unmarried people who are on their own usually rent housing and frequently move from unit to unit as their jobs and roommates change. They are also more likely to seek smaller units and ones involving less maintenance, for example apartments rather than single family homes. Young married couples may rent apartments, but if they have children, they are more likely to own or to rent a single family house. As their family size increases or their incomes increase, they may purchase larger housing.

When a couple approaches retirement, they may wish to have a smaller unit with reduced maintenance costs. Retirement and convalescent homes are often a final step for elderly people who cannot, or choose not to live alone or with relatives. It is important for a city to provide a range of housing types to fit the needs of all people in the jurisdiction. Household characteristics for the City of Highland are discussed below and compared to the type of housing available.

Household Size

According to Urban Decision Systems, the average household size in 1980 for the City of Highland was 2.80. By 1990, household size increased to 3.04, according to the Census, an almost 9 percent increase. In comparison, the 1990 household size in San Bernardino County was 3.05. A continuing decline in household size is a national trend. Demographic changes, which include high divorce rates, later marriages, and fewer children, account for a large part of this national decline. However, in the City of Highland, the rise in household size is likely due to new residents of the area, which are generally young adults and young families with children.

Owner/Renter Status

Highland has a relatively high percentage of owner occupied to renter occupied housing units. Of all occupied housing units in Highland, 61 percent are owner occupied, compared to 63 percent in San Bernardino County (see Table II-G-12). This percentage has remained virtually the same since 1980 according to Urban Decision System estimates.

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Table II-G-12
Occupied Units

	1980		1990	
	Number	Percent	Number	Percent
City of Highland				
Owner-Occupied Units	4,980	62%	6,910	61%
Renter-Occupied Units	3,110	38%	4,407	39%
Total	8,090	100%	11,317	100%
San Bernardino County				
Owner-Occupied Units			294,248	63%
Renter-Occupied Units			170,489	37%
Total			464,737	100%

Source: 1990 U.S. Census, Urban Decision Systems, 1991.

The continuing housing need for both affordable single family homes and apartments within the City of Highland will likely maintain the current percentages of owner versus renter status.

Household Income

Median household income in the City of Highland was estimated in 1980 to be \$15,015 and in 1989 to be \$31,561. This compares to the County median household income documented in the Census in 1980 of \$17,463 and an estimate of \$30,300 in 1988 (State Department of Housing and Community Development, 1988). This shows that the median income of residents increased 66 percent, the City of Highland had a lower median income than the County in 1980, and a 4 percent higher median income in 1990. Estimates of the breakdown of household income indicates that the largest percentage of households in Highland have an income between \$20,000 and \$29,999 (see Table II-G-13).

Table II-G-13
Household Income

Household Income	1980		1990	
Less than \$10,000	2,644	33 %	1,400	12 %
\$10,000 - 19,000	2,828	35 %	1,989	18 %
\$20,000 - 29,999	1,574	19 %	1,924	17 %
\$30,000 - 39,999	665	8 %	1,856	16 %
\$40,000 - 59,999	277	3 %	2,172	20 %
\$60,000 - 99,999	78	1 %	1,623	14 %
\$100,000 +	24	.3 %	385	3 %
Total	8,090	100 %	11,349	100 %

Source: 1980 and 1990 U.S. Census.

Income Spent For Housing

An important factor in determining existing housing need is the affordability of housing. One measure of housing affordability is the percentage of a household's gross income which is needed to meet monthly mortgage payments. A criterion used by the State, Southern California Association of Governments (SCAG), and the United States Department of Housing and Urban Development (HUD), to define affordable housing, is that housing costs should not exceed 30 percent of a household's gross income.

There is an inverse relationship between income and the percentage of income spent for housing. Low income households generally pay a higher percentage of their income for housing than do high income households. In addition, renters, particularly among the lowest income ranges, tend to pay a higher percentage of their income for housing than home-owners. The households that pay more than 30 percent of their income toward a housing payment are identified as those that have an existing need for affordable shelter. This figure does not include lower income households who do not pay an inordinate amount of their income for shelter, nor does it include homeless people or those who live in overcrowded and substandard housing. Table II-G-14 shows the maximum rents in the Riverside-San Bernardino Primary Metropolitan Statistical Area (PMSA) that could be charged to very low and low income households without exceeding 30 percent of gross income.

Table II-G-14
Fair Market Rents
Riverside-San Bernardino
Primary Metropolitan Statistical Area (PMSA)

Size	Rental Amount
Efficiency	\$401
1 Bedroom	\$473
2 Bedrooms	\$552
3 Bedrooms	\$714
4 Bedrooms	\$805
Single-Wide Space ¹	\$147
Double-Wide Space ¹	\$242

Source: U.S. Department of Housing and Urban Development, 1988.

¹ Manufactured home spaces.

Table II-G-15
Housing Overpayment By Lower Income Households in Highland

Household Type	Number	Percent
Lower Income Owner Households	805	
Very Low Income ¹	387	48%
Low Income ²	418	52%
Lower Income Renter Households	1,388	
Very Low Income ¹	1,047	75%
Low Income ²	341	25%
Lower Income Households Overpaying for Housing	2,193	
Total Households	11,317	

Source: Southern California Association of Governments, February 16, 1989

¹ 0 - 50% of median income.

² 50% - 80% of median income.

Housing

The table above indicates that in 1989, there were 2,193 households, or 19 percent, of the total number of households, overpaying for housing in the City of Highland. A majority of the low and very low households, 1,388 or 63 percent, were renters.

Affordability problems in the housing market reflect the rising disparity between housing costs and incomes. This is particularly true in Southern California, where, between 1970 and 1985, there has been a 337 percent increase in housing costs, as compared to a 182 percent increase in real income over the same period. In many of the Southern California metropolitan areas, a significant percentage of potential home buyers are being priced out of the market. The City of Highland has homes that are affordable for the first time home buyer, and it will be important for the City to continue to provide units that are affordable to lower-income households. However, Table II-G-15 shows that a significant portion of very low and low income households within the City of Highland are currently paying more than 30 percent of their income for housing. This indicates that, although the local housing market is much less expensive than Los Angeles and Orange Counties in general, there is a significant local population for whom housing is still unaffordable.

Existing and Projected Housing Needs

This section of the Housing Element discusses the various factors which induce a demand for housing. The factors include a review of population and employment trends as well as the City's "share of regional housing need."

Housing Stock Condition

The condition of existing housing has an impact on the overall perceived quality of particular neighborhoods or housing tracts, and can significantly affect resale of existing housing units. The most common measures of these conditions are the amounts of units considered "substandard," or overcrowded.

There are differences between housing stock condition and housing improvement needs. The term "condition" refers to the physical quality of the housing stock; the quality of individual housing units or structures may be defined as either sound, deteriorating or dilapidated. Sound housing is defined as a structure with no major deficiencies, although the structure may require minor maintenance, painting, and general clean-up. A deteriorated structure is one that contains several deficiencies such as patched, loose, or missing roofing material, missing or broken windows, wood trim or siding worn, weathered or broken, paint cracking or peeling, loose or worn wiring. Lastly, dilapidated structures contain one or more major structural deficiencies such as loose protective surface (brick, plaster, wood, or siding.), settled porch or roof, weakened structure or inadequate foundation, obvious deviation from plumbing, or extensive damage due to fire. Housing improvements, on the other hand, refer to the nature of the "remedial" actions necessary to correct defects in the housing condition such as demolition, minor repairs, major repairs and rehabilitation.

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Age of Housing Stock

An important factor in determining both the present and expected future housing stock conditions is the age of the units. According to the 1990 Census, the majority of housing units were built in the 1950's, 1960's and the late 1980's (see Table II-G-16).

Table II-G-16
Age of Housing Units

	Number	Percent
Before 1940	586	5%
1941 - 1949	1,063	8%
1950 - 1959	2,486	20%
1960 - 1969	2,488	20%
1970 - 1979	1,197	10%
1980 - 1984	929	7%
1985 - 1988	2,434	20%
1989 - March 1990	1,379	10%
Total	12,562	100%

Source: 1990 U.S. Census

It is likely that rehabilitation and home improvements will become increasingly important in converting the older housing stock.

According to a windshield survey conducted in 1990, there were 161 housing units in Highland in need of replacement (see Table II-G-17). This shows that one (1) percent of the housing stock in Highland needs to be replaced.

Table II-G-17
City of Highland: Number of Substandard Rehabilitation
and Replacement Housing Units (1990)

Type of Unit	Number
Substandard Units	805
Need Repair	644
Need Replacement	161

Source: Casteneda & Associates, 1990.

Housing

Building permit information shows that from July 1988 to January 1992, 15 residential buildings were issued demolition permits. This indicates that there are very few housing units that are dilapidated beyond repair and warrant demolition.

Housing Assistance Needs

California housing law requires regional planning agencies to identify existing and future housing needs for all income levels every five years. In addition to the distribution of housing need, regional planning agencies must seek to avoid further "impaction" of jurisdictions with relatively high proportions of lower income households. The Southern California Association of Governments (SCAG) issues the housing assessment for San Bernardino County and the remainder of the SCAG six-county region. The housing need figures are contained in a report known as the Regional Housing Needs Assessment (RHNA) published in 1988, which used the 1980 United States Census as the primary data source. In this report, existing need is defined as the number of lower income households paying 30 percent or more of their income for housing. On February 16, 1989, the Southern California Association of Governments published a supplement to the Regional Housing Needs Assessment documenting existing and future need figures for the new cities, one of which was Highland.

According to the Southern California Association of Governments (SCAG), future need is defined as the number of additional housing units, by income level, that will have to be added to each jurisdiction's housing stock from July 1, 1989 to June 30, 1994 in order to accommodate household growth, compensate for demolitions and other inventory losses, and to achieve a healthy 1994 vacancy rate. In addition, the State Department of Housing and Community Development has required that localities must account in their Housing Elements for future needs that will have already occurred during the 1-1/2 year "gap" period from January 1, 1988, to June 30, 1989. Four income levels are identified in state law that must be considered in the future need calculations (see Table II-G-18).

Table II-G-18
Income Levels

Income Level	Percent of Median Income (\$24,987)	Amount of Income
Very Low	Less than 50%	Less than \$12,500
Low	50% to 80%	\$12,500 to \$20,000
Moderate	80% to 120%	\$20,000 to \$30,000
Upper	Over 120%	\$30,000 or more

Source: State Department of Housing and Community Development

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The State housing law requires that in allocating future housing need by income level further "impaction", or concentration of lower income households, be avoided. Cities with a percentage of lower income households higher than the regional average are called "impacted" jurisdictions. The 1988 Regional Housing Needs Assessment addresses the "avoidance of impaction" criteria by allocating reduced percentages of lower income and increased percentages of middle and upper income units to impacted jurisdictions while reversing the allocation to non-impacted cities.

According to the February 1989 Regional Housing Needs Assessment supplement, there are 2,194 Highland resident lower income households paying 30 percent or more of their income on housing costs. This number equals 8 percent of Highland's total resident households (see Table II-G-19). Table II-G-20 shows the rents in San Bernardino County in 1988 for low- and very low-income families.

Table II-G-19
City of Highland: Existing Housing Need by
Income and Tenure: 1987

	Owner	Renter	Total
Very Low Income (0-50% of median income)	387	1,047	1,434
Low Income (50% - 80% of median income)	419	341	760
Total:	806	1,388	2,194

Source: Southern California Association of Governments, 1988 Regional Housing Needs Assessment for Southern California, supplemented by memorandum dated February 16, 1989, on the subject of the RHNA for new cities.

Table II-G-20
Rent Levels for Low and Very Low Income Family
in San Bernardino County (1988)

Income	Percent of Median	Rent = 30%
\$24,240	80%	\$606
\$21,210	70%	\$530
\$18,180	60%	\$455
\$15,150	50%	\$379

Source: City of San Bernardino General Plan, 1989.

Housing

Table II-G-21 indicates the projected housing needs for the City of Highland from June, 1988 through mid-year 1994. Meeting the needs of these households usually requires housing subsidies and financial assistance. Components of Highland housing need are indicated in Table II-G-22

**Table II-G-21
Future Housing Need Adjustment**

Household growth during 5-year period	1,517
Vacancy adjustment	- 140
Demolition Adjustment	0
Total	1,377

Source: Southern California Association of Governments, 1988 Regional Housing Needs Assessment for Southern California, as supplemented by Memorandum dated February 16, 1989, on the subject of RHNA for New Cities.

**Table II-G-22
City of Highland: Regional Housing Needs Assessment
July 1989 to June 1994**

Income Level	Number	Percentage Distribution
Very Low	266	19%
Low	205	15%
Moderate	260	19%
High	646	47%
Total	1,377	100%

Source: Southern California Association of Governments, 1988 Regional Housing Needs Assessment for Southern California, as supplemented by Memorandum dated February 16, 1989, on the subject of RHNA for New Cities.

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Assisted Housing at Risk of Conversion

State law requires the City to identify, analyze, and propose programs to preserve housing units that are currently restricted to low income housing use and that will become unrestricted and possible be lost as low income housing. This section identifies those units in Highland, analyzes their potential to convert to non-low income housing uses, and analyzes the costs to preserve and/or replace those units.

This section identifies all of the low income housing units in the City of Highland that are at risk of converting to non-low income housing uses between July 1, 1992 and July 1, 2002. This inventory includes all multi-family rental units assisted under federal, state, and/or local programs, including HUD programs, state and local bond programs, redevelopment programs, and local in-lieu fees, inclusionary, density bonus, or direct assistance programs.

There are no housing units in Highland that are at risk of converting from low income housing through loss or termination of State or federal subsidies or restrictions.

There are five low income residential rental properties that participated in the County's Housing Incentive Program (HIP). As part of the Housing Incentive Program (HIP), density bonuses of up to 25 percent of the density shown on the General Plan map were awarded to residential projects in which units were reserved for and affordable to, low and moderate income households. This program also provides for density bonus of up to 100 percent for qualifying senior citizen projects.

In addition, there are four residential projects in Highland that participated in the County's Multi-family Mortgage Revenue Bond Program. There are a total of 89 dwelling units in Highland which are restricted to low income through this program. To ensure that these housing units remain affordable, the County is rewriting their funding procedures to require owners to give additional affordable units in exchange for lower interest rates and refinancing. It is likely that developers will continue to participate in the County's housing programs due to the current economy which limits other refinancing options.

Housing

Table II-G-23
Assisted Housing At Risk of Conversion in Highland

Project Name	Location	Type of Assistance	Length of Affordability Controls	Earliest Potential Conversion Date	Number of Units	Number of Affordable Units
Arrowview Park Apartments	26030 E. Base Line	Revenue Bond Program	10 years	January 1997	220	44
Evergreen Properties	7826 Lankershim	Density Bonus	10 years	June 1994	60	15
Highland Victoria Avenue	7150 Victoria	Density Bonus	10 years	September 1994	6	2
Monterey Villas (2)	7000 La Praix	Revenue Bond Program	10 years	September 1996	56	11
Raintree Apartments	26660 9th Street	Revenue Bond Program	10 Years	1998	152	30
Sterling Park Apartments	7405 Sterling	Density Bonus	10 Years	October 1996	80	20
Victoria Apartment	6920 Victoria Avenue	Revenue Bond Program	10 Years	January 1997	19	4
Village Square Apartments	25941 9th Street	Density Bonus	10 Years	July 1984	80	25

Source: County of San Bernardino, 1992.

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Housing Projections

Using an average of 37 residential building permits issued per month, on average, 444 residential units were built per year from July 1988 to January 1992 (see Table II-G-24). This would result in 2,220 housing units over the five year period, substantially more than the required 1,377 dwelling units. The large amount of vacant residential land makes this goal very realistic.

Table II-G-24
City of Highland Residential Building Permits

Time Period	Residential Building Permits	Average Permits per Month
July-December 1988	484	81
January-December 1989	413	34
January-December 1990	389	32
January-December 1991	167	14
January 1992	24	24
Average	444	37

Source: City of Highland, Community Development Department, February 1992.

Special Housing Needs

A household is defined as a group of people, related or unrelated, living together in residence. In addition to the more typical two-parent households that may or may not have children, there are a variety of household types with unique needs that should be given special consideration, since they often find it difficult to obtain housing. These groups consist of the elderly, female-head-of-households, military households, farmworker households, and the homeless.

Handicapped Households

Households with one or more members who have physical handicaps sometimes require special design features in the housing they occupy. Some, but certainly not all, handicapped households also have housing assistance needs. The focus of handicapped households as a special need segment is primarily on their number and economic situation.

Housing

The needs and problems of the disabled and handicapped population have been described as follows:

- The major housing problems of disabled people are the lack of affordable accommodations and inadequate accessibility to newly built or existing housing. These basic problems are caused by a variety of factors: a) subtle, or not so subtle discrimination; b) lack of understanding and sensitivity to the needs of the disabled; c) lack of financial resources and incentives available to those who want to make their buildings accessible and; d) lack of knowledge as to how accessibility can be improved.
- General solutions include: a) public recognition and commitment to correcting the problems; b) education of and dissemination of information to the public and building owners; c) modifications to existing codes and regulations; d) enforcement of existing laws and regulations; and e) increased financial assistance for housing programs.¹

According to the 1990 Census there were 2,132 people, sixteen years and older, with a mobility or self-care limitation or both. There is no income data reported in the 1990 Census for persons with these physical disabilities.

Elderly

Fifteen percent of Highland's households have a member 65 years or older. This is only slightly less than the County figure, where nineteen percent of the households include a person 65 years or older. These percentages are relatively high, likely due to the large number of retirement communities in San Bernardino County.

The Southern California Association of Governments has indicated that the senior citizen population aged 65 and older is expected to double by the year 2010. This increase reflects the aging of the "baby boomers" across the nation, and extended life expectancy due to the advances in medicine.

Housing for the elderly is not only a physical, but a social planning issue. The elderly are largely dependent upon fixed incomes (pensions, social security, etc.), which are sensitive to increased housing costs. Elderly renters often must pay in excess of 30 percent of their income for housing. Elderly homeowners may have difficulty paying for their homes, even if they have small or no mortgage payments, as they may not be able to afford necessary repairs, taxes, or upkeep on their property. Therefore, not only is housing required for the elderly, but affordable housing with services adapted to their special needs is necessary. The City can also support the rehabilitation of existing housing, as well as encourage the provision of shared housing opportunities. Of the occupied units in the City of Highland, 1,154 are owned by an elderly person 65 years or older, while 284 are rented by an elderly person.

The physical disabilities that affect elderly persons can make living alone not only lonely, but dangerous. Housing specifically designed for the elderly should be permitted in areas with adequate services, and with traffic and walkway regulations that support a pedestrian lifestyle and are accessible to the handicapped. Many elderly experience isolation when living alone. The 1990 Census indicates that there are 1,713 households with one or more persons over 65 years of age in the City of Highland, while 35 percent live alone (see Table II-G-25).

¹ The Center for Independent Living Inc., Berkeley and Northern Section, Cal Chapter of the American Planning Association, A Guidebook on the General Plan and Disabled, June 1981.

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Table II-G-25
Elderly Households

	City of Highland		County of San Bernardino	
	Number	Percent	Number	Percent
1-person Household	600	35%	31,891	36%
2-or-more person Household	1,113	65%	57,545	64%
Total Elderly Households	1,713	100%	89,436	100%
Total Households	11,317		464,737	

Source: 1990 U.S. Census.

Female Head of Household

Female householder families are characterized by low income levels, large families, overcrowding, and lower home ownership rates. Consequently, female householder families may need housing assistance, affordable housing, child care services, areas for children to play, and other forms of housing assistance.

Approximately 27 percent of Highland's households are headed by women. This is reflective of the County's 24 percent. In Highland, 46 percent of these households had children.

Overcrowded Households

Overcrowding is defined as housing units with 1.01 or more persons per room. Of the occupied housing units in Highland, 1,289 units are overcrowded, according to the 1990 Census.

Large Families

Large family households are characterized as a special needs group because they require a greater number of rooms per dwelling unit to avoid overcrowding. Large families are defined as households with five (5) or more persons. The 1990 Census stated that 1,900 or seventeen percent consist of households with 5 or more persons. A steady decline in household size since 1970 indicates an increase in one and two person households and a decrease in larger families. However, it is likely that the number of large families will increase as the population of the City continues to grow. The 1980 Census indicates 14 percent of all households consist of five or more persons.

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Minority Households

The City of Highland does not presently contain a substantial minority population. Minority families face a multitude of housing problems, including those of low income, low home-ownership rates, and substandard housing conditions. The 1990 Census identifies 2,629 minority household, which is 23 percent of the total number of households in the City of Highland. Of these City's households, 18 percent are Hispanic, 10 percent are Black, 3 percent are Asian, .1 percent are American Indian and other (see Table II-G-26). Minority families also have higher percentages of large households, and, therefore, experience the overcrowding that usually results.

Table II-G-26
Minority Households

	Owner		Renter	
	Number	Percent	Number	Percent
White	5,795	84%	2,894	66%
Black	47	5%	831	19%
American Indian	74	2%	52	1%
Asian/Pacific Islander	226	3%	178	4%
Other	2	6%	453	10%
TOTAL	6,910		4,408	
Spanish/Hispanic ¹	1,074	16%	950	22%

Source: 1990 Census

¹ Includes people who may be counted in other categories; householder of Hispanic origin.

Military Households

Military households are a special needs group because housing is not provided for all military personnel stationed at Norton Air Force Base, and a small amount of housing allowance is provided by the military for off-base housing. However, with the closure of Norton Air Force Base as a military installation in December 1994, the off-base housing needs of military personnel will be eliminated. Changes in housing demand in Highland are anticipated to accompany population changes associated with the closure (see Table II-G-27).

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Table II-G-27
Projected Site-Related Housing Demands,
1987 to Closure of Norton Air Force Base

Year	City of Highland
1987	395
1988	298
1989	279
1990	263
1991	259
1992	185
1993	106
Closure ¹	0

Source: Disposal and Reuse of Norton Air Force Base, California, Draft Socioeconomic Impact Analysis Study, January 1992.

¹ Closure represents March 1994 conditions.

Farmworker Households

The State of California requires that farmworkers be considered when assessing housing needs. These households are low income, transient and likely to be minority group members. Although San Bernardino County has a large agricultural industry, the County Agricultural Commissioner's Office indicates that the agricultural uses present are not likely to require seasonal help with harvesting. A 1988 report "Migrant Farmworker Housing in California" by the State of California Department of Housing and Community Development, did not list any farmworker housing facilities in the County of San Bernardino. In addition, the 1990 Census documented that no housing units located in the City of Highland were vacant due to migrant workers.

Homeless

There are many social, economic and physical conditions which have combined to increase the homeless population throughout the State of California. In September 1984, the Governor signed Assembly Bill 2579, adding "families and persons in the need of emergency shelter" to the special needs groups to be considered in each jurisdiction's housing element.

The Frazee Community Center operates the only homeless shelter in the City of Highland. This 30-bed shelter is open to all homeless individuals, although priority is given to homeless families. There were 912 people sheltered in 1990, with lengths of stay ranging from a few days to several months. The shelter is always full, and every night many people are turned away. No records are kept as to the number of homeless people turned away, and estimates of the homeless population in

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Highland are very difficult. According to the director of the Frazee Community Center, 35 percent of the homeless in the shelter in 1990 said they were from the City of Highland. There is general agreement that the number of homeless is increasing and that the greatest increase is among families with children.

In 1987, the Southern California Association of Governments (SCAG) conducted a survey of homelessness in the region (see Table II-G-28).

Table II-G-28
Homeless Persons in Southern California
Association of Governments (SCAG) Region

Number of Homeless	Number of Cities
0	10
1 - 25	31
26 - 100	15
101 - 250	14
251-500	3
501 - 1,000	0
1,001 +	6

Source: Southern California Association of Governments (SCAG), 1987.

Respondents were asked to break down their homeless population by subgroup where possible. In more than half the cases, the respondents did not provide estimates of sub-populations. Table II-G-29 shows the average percentage reported by jurisdictions for each of the subgroups named, while Table II-G-30 are countywide homeless estimates for San Bernardino County.

Table II-G-29
Reported Homeless Subgroup Populations

	Average Percent	No. Responses
Veterans	16%	19
Elderly	10%	23
Single Persons	63%	37
Persons in Families	22%	38
Mentally Ill	29%	29
Alcohol Abusers	41%	33
Substance Abusers	27%	28
Children	16%	30
Total		237

Source: SCAG, 1987

Table II-G-30
Countywide Homeless Estimates
for San Bernardino (1987)

Individuals	1,175
Households	459
Families	312
Children	552
Veterans	3
Mentally Ill	47

Source: San Bernardino County Housing Element, 1989.

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Housing Opportunity

This section of the housing element provides an inventory of resources and constraints relevant to addressing Highland's housing needs. Under present law, the element must include an inventory of resources and constraints as follows:

- An inventory of land suitable for residential development, including vacant sites and sites having potential for redevelopment, and an analysis of the relationship of zoning and public facilities and services to these sites.
- An analysis of potential and actual governmental constraints upon the maintenance, improvement, or development of housing for all income levels, including land use controls, building codes and their enforcement, site improvements, fees and other exactions required of developers, and local processing and permit procedures.
- An analysis of potential and actual non-governmental constraints upon the maintenance, improvement, or development of housing for all income levels, including the availability of financing, the price of land and cost of construction.

Inventory of Land Suitable for Residential Development

The State housing law contains several provisions that pertain to the adequacy of sites to accommodate housing needs. The three major provisions are noted below:

- "The housing element shall identify adequate sites for housing, including rental housing, factory-built housing, and mobile homes, and shall make adequate provision for the existing and projected needs of all economic segments of the community."
- "An inventory of land suitable for residential development, including vacant sites and sites having potential for redevelopment, and an analysis of the relationship of zoning and public facilities and services to these sites."
- "Identification of adequate sites which will be made available through appropriate zoning and development standards and with public services and facilities needed to facilitate and encourage the development of a variety of types of housing for all income levels, including rental housing, factory-built housing, mobilehomes, emergency shelters and transitional housing in order to meet the community's housing goals."

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The Highland Interim Land Use Element indicates the inventory of land suitable for residential development including both vacant and underutilized sites by residential density category. Areas with sites having a realistic potential of residential development include the east-southeast area with the largest number of vacant sites, the north-northeast area with the next most numerous sites, the central area with the third largest number of sites, and lastly, few scattered parcels found in the western section of the City. This land supply could yield a potential for an additional 14,000 housing units which exceeds Southern California Association of Governments (SCAG) needs Assessment (RHNA) figure of 1,377 dwellings for the 1989 - 1994 time period.

A total of 21,009 housing units can be expected at buildout (see Table II-G-31).

Table II-G-31
Proposed Residential Land Development Capacity
Within Highland

Land Use Designation	Density	Total Acres Available	Expected Density (Dwelling Units)
Agriculture/Equestrian	0-2.0 du/ac	1,218	1,218
Low Density	2.1-6.0 du/ac	3,246	13,146
Medium Density	6.1-12.0 du/ac	256	2,317
High Density	12.1-18.0 du/ac	25	376
Planned Development		1,399	3,856
Village Residential		29	96
City Total		6,173	21,009

Source: City of Interim Highland Proposed Land Use Map, 1991.

Residential Land Use Categories

Agricultural/Equestrian (0-2.0 du/ac)

Areas designated for Agricultural/Equestrian category are appropriate for rural and equestrian-oriented residential development. This land use category permits and protects the keeping of large animals, as well as the ability of landowners to carry on light agricultural activities. The maximum residential density is up to two dwelling units per acre (2 du/ac).

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Low Density (2.1-6.0 du/ac)

The Low Density category limits land uses to single family detached residential, small lot single family detached residential, and mobile homes, subject to applicable General Plan policies and the City of Highland ordinance provisions. The maximum density within Low Density areas is up to six dwelling units per gross acre (6 du/ac). Within the portion of Highland west of the proposed Foothill Freeway, the development of second units and attached dwellings behind the primary residential structure are allowed with the following provisions: the maximum density of 6 dwelling units per gross acre is not exceeded, infrastructure is available to support additional dwelling units, and the additional dwellings are architecturally compatible with the primary dwelling unit and the predominant character of the neighborhood. In addition, within the same area of the City, second units and attached dwellings, which were constructed pursuant to valid permits issued prior to the effective date of this element are permitted, even if the resulting density of a site would be greater than 6 du/ac.

Medium Density (6.1-12.0 du/ac)

The areas designated Medium Density are committed to low intensity multiple family use, or transitions between higher intensity commercial and apartment uses and lower intensity residential and open space uses. Within the Medium Density category, land uses are limited to small lot single family detached residential, attached residential development, and mobile homes, subject to applicable General Plan policies and the City of Highland ordinance provisions. The maximum allowable density within areas designated Medium Density is up to twelve dwelling units per gross acre (12 du/ac).

High Density (12.1-18.0 du/ac)

Within the High Density category, land uses are limited to attached residential, subject to applicable General Plan policies and the City of Highland ordinance provisions. High Density areas have good access to major transportation routes, are in close proximity to neighborhoods serving commercial facilities, and do not negatively impact low density, single family residential areas. The maximum density for projects within the High Density category is up to eighteen dwelling units per gross acre (18 du/ac).

Planned Development

Within the Planned Development classification, all residential land uses considered to be appropriate within the City of Highland, as well as support uses (e.g. open space and recreation, public facilities, support commercial, limited employment-generating uses), may be appropriate subject to applicable General Plan policies and ordinances. Development within areas designated Planned Development are processed through use of a specific plan pursuant to Government Code Section 65450, a planned unit development, or similar mechanism. Development intensities within Planned Development areas must be consistent with the provisions of the Highland General Plan. Planned Development projects must provide a greater level of community amenities and cohesiveness, achieve superior design, and create a more desirable living environment than could be achieved through conventional subdivision design and requirements.

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Availability of Sites for Housing

This section of the Housing Element evaluates the potential additional residential development which could occur in Highland under the current General Plan and zoning (see Figure II-G-1 and Table II-G-32). The lack of developable vacant land is not a problem in Highland, particularly in the eastern portion of the study area. An inventory of developed and undeveloped residential land in the City shows that 51 percent of residential land is developed, while 49 percent is undeveloped. The area with the largest percentage of undeveloped residential land is Area D, located from Church Street to the eastern city limits. In this area, 84 percent of land designated residential is undeveloped, while in area A, located between Palm Avenue and the western city limits, only 9 percent of the land designated residential is undeveloped. Not surprisingly, Area A is the oldest, "core" area of Highland, and contains the highest density of population. Area B, the portion of the study area between Palm and Boulder Avenues, is evenly split between undeveloped and developed residential land, while Area C has slightly more, 20 percent, developed to undeveloped residential land.

This gives a general view of developed and undeveloped residential acreage, but not sites for housing. Area A, located from Palm Avenue west to the City limits, is the oldest, "core" area of Highland, containing the highest density of population and greatest percentage of developed residential acreage.

Area B, located between Palm and Boulder Avenues, is evenly split between developed and undeveloped residential acreage.

Area C, located between Boulder Avenue and Church Street, contains slightly more developed residential land.

Area D, located from Church Street to the Eastern City limit, has very little residential development, but a great deal of residential development potential.

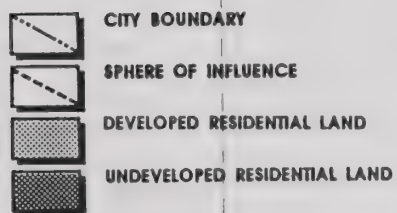
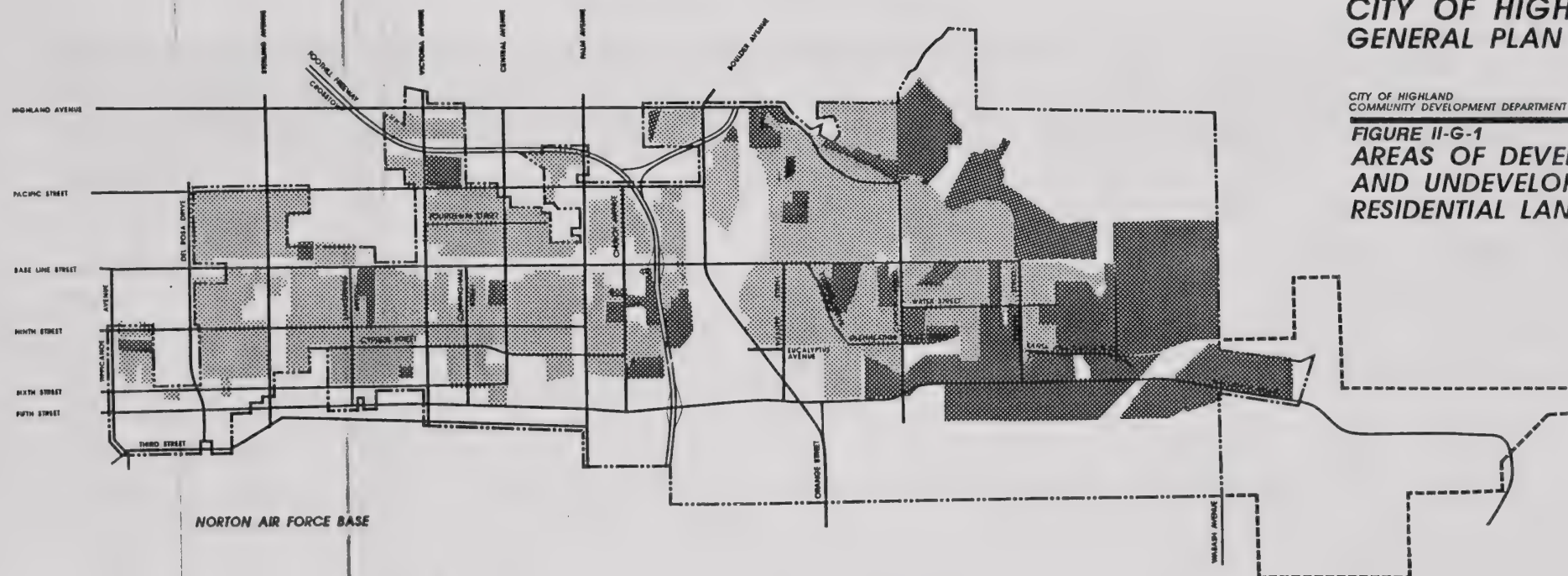
Vacant land that is currently served by infrastructure is the land most likely to develop. Vacant residential land is identified on Figure II-G-2. There is also approximately 234 acres of underutilized residential land in the City of Highland. Underutilized land is defined as an area where a significant number of parcels are developed, but because of lot size/shape, housing type, or other factors, the number of dwelling units is significantly less than what is allowed by existing zoning. These areas in Highland are shown on Figure II-G-3.

CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

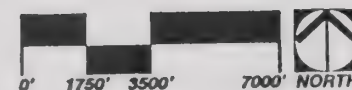
**FIGURE II-G-1
AREAS OF DEVELOPED
AND UNDEVELOPED
RESIDENTIAL LAND**



SOURCE: CITY OF HIGHLAND, 1992.

PLANNING NETWORK

II-G-36



**Table II-G-32
Developed and Undeveloped Residential Acreage**

	A		B		C		D		Total	
	Developed Acres	Undeveloped Acres	Developed Acres	Undeveloped Acres	Developed Acres	Undeveloped Acres	Developed Acres	Undeveloped Acres	Developed Acres	Undeveloped Acres
Single Family										
Number	1,060	95	207	218	637	406	176	1,104	2,080	1,823
Percent	70%	6%	42%	45%	56%	36%	8%	53%	40%	34.8%
Duplex										
Number	77	9	2	2	13	0	10	0	102	11
Percent	5%	1%	.4%	.4%	1%	0%	.5%	0%	2%	.2%
Multi Family										
Number	237	30	37	21	5	24	13	189	292	264
Percent	16%	2%	7.6%	4.6%	1%	2%	.5%	9%	6%	5%
Planned Unit Development¹										
Number	0	0	0	0	21	24	150	459	171	483
Percent	0%	0%	0%	0%	2%	2%	7%	22%	3%	9%
Total Number of residential acres	1,374	134	246	241	676	454	349	1,752	2,645	2,581
Total Percent of residential acres	91%	9%	50%	50%	60%	40%	16%	84%	51%	49%
	100%		100%		100%		100%		100%	

Source: Management Services Institute, September, 1988

¹ Residential only.

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Residential Development Potential Compared to Regional Housing Needs

As previously indicated, Southern California Association of Governments (SCAG) identified a future housing need for Highland of 1,377 dwelling units to be developed during the time period 1988 to 1994. According to vacant residential land, an estimated 5,681 housing units on approximately 1,980.5 acres could be developed in Highland during the five-year period. Approximately 646 units are needed for high income households, 260 for moderate income households, 205 for low income households, and 266 for very low income households (see Table II-G-22). The City of Highland will promote a broad range of housing types and prices to achieve these goals. More emphasis will be placed on developing action programs to meet the needs of the low to moderate income households, as the market does not provide for these populations.

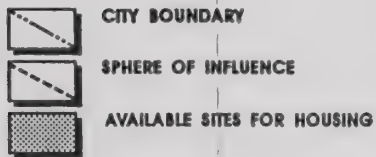
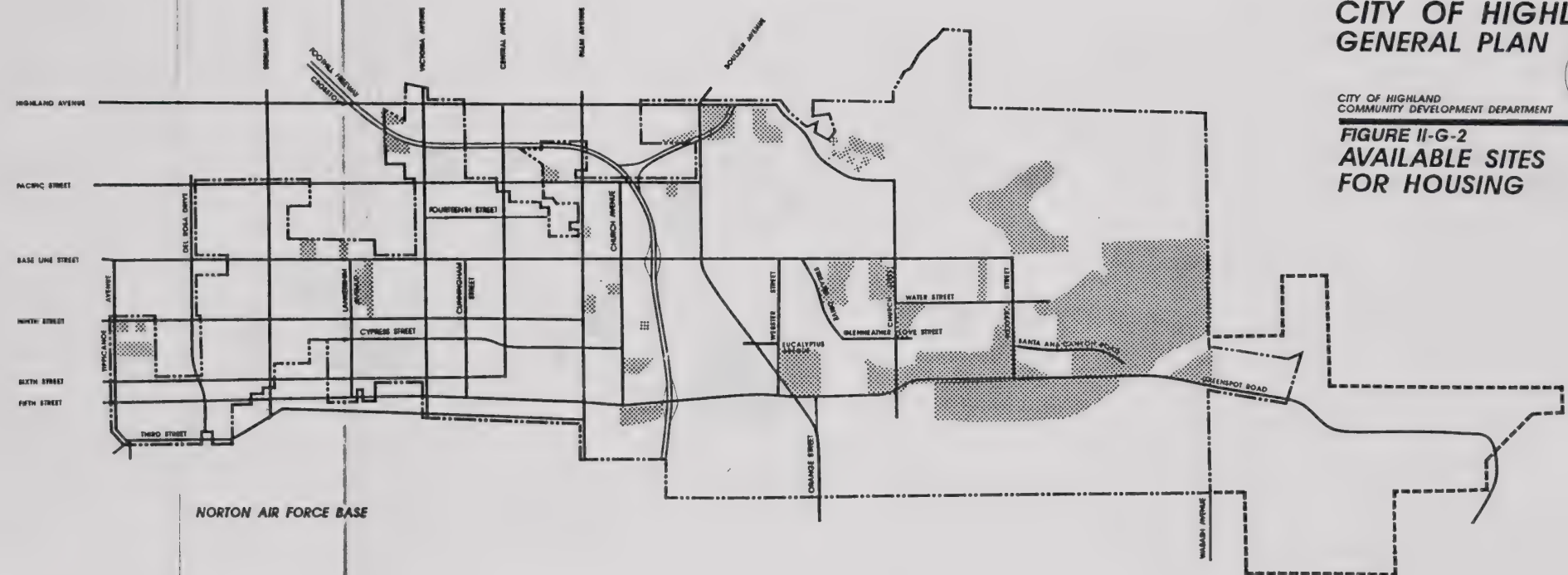
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CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-G-2
AVAILABLE SITES
FOR HOUSING**



SOURCE: PLANNING NETWORK, 1992.

PLANNING NETWORK

II-G-39

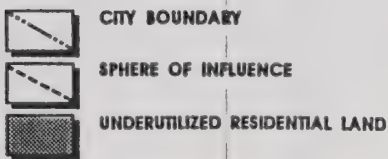
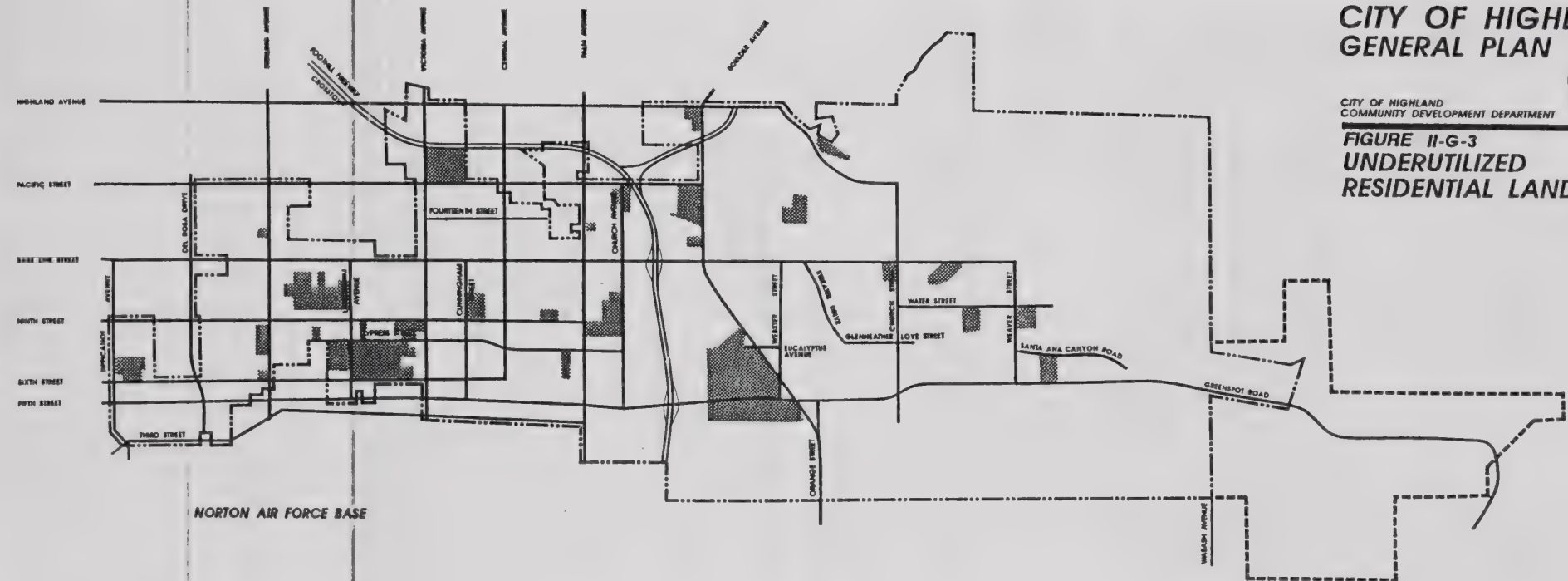


CITY OF HIGHLAND GENERAL PLAN



CITY OF HIGHLAND
COMMUNITY DEVELOPMENT DEPARTMENT

**FIGURE II-G-3
UNDERUTILIZED
RESIDENTIAL LAND**



SOURCE: PLANNING NETWORK, 1992.

PLANNING NETWORK

II-G-40



The Highland Redevelopment Agency

The Highland Redevelopment Project Area No. 1 has an obligation to carry out activities related to upgrading public facilities and improving quality of life for residents in the Project area and the future of the City. Currently, the Project Area contains urbanized, vacant and agricultural land with the following existing land uses: residential, commercial, industrial, institutional, public facilities, agriculture, vacant land and public rights-of-way. One of the impacts of the project will be to increase the City's affordable housing stock. Field surveys have shown that existing residential areas generally consist of older buildings, showing a decline in maintenance levels and growing with regards to land use and design cohesiveness.

Residential Development

Implementation of the Redevelopment Plan will occur over a 40-year period. Based upon the General Plan Buildout within the project area, 2,883 housing units could be added to the City's housing stock (see Table II-G-33).

Table II-G-33
Housing Units in Redevelopment Area

Description	Number of Units
Existing Single Family Units	1,089
Existing Multi Family Units	870
Existing Condition ¹	1,959 ²
Potential Long-Term Growth Statistics	924 ³
Total Buildout Units	2,883
Percent Increase	47%

Source: Draft EIR, Highland Redevelopment Project, March 1991.

¹ Within the Project Area.

² Taken from EIR Consultant Field Surveys.

³ Based upon the change of existing land uses in conformance with the Highland General Plan.

The current resident population within the Project Area is estimated to be 5,641 (calculated by multiplying residential dwelling units times 2.88 the average household size, Department of Finance), which is 16 percent of Highland's total population (34,439).

Assuming General Plan build-out of the proposed Project Area to densities allowable under the City's General Plan, the number of housing units could increase by 47 percent or 924 additional housing units. These additional housing units could generate a population increase of approximately 2,661 people throughout the Project Area.

As previously discussed, the project will provide new housing opportunities, as well as generating a positive impact upon existing housing conditions by being a vehicle which General Plan policies and programs applicable to affordable housing programs can be initiated. The provision of at least 20 percent of the derived tax increment to be used toward meeting low and moderate income housing needs will provide a new benefit to the housing market by increasing available housing inventory

Single family residential land uses consist of 445.81 acres, or 19.6 percent of the project area, while multi-family uses occupy 41.73 acres or 1.8 percent of the project area.

**Table II-G-34
Housing at Project Buildout**

Land Use Designation	Acres	Dwelling Units
Agriculture/Equestrian	59.42	119
Low Density	287.56	1,725
Medium Density	74.64	895
Planned Development	65.82	144
Total	487.44	2,883

Source: Environmental Impact Report For The Highland Redevelopment Project, March 1991.

Energy Conservation

The availability of energy resources is a growing societal concern. When fossil fuel was inexpensive, there seemed little reason to build energy efficient housing. As a result, the cost of heating and cooling a home has increased as the cost of fuel becomes more expensive. In many cases, this cost has become the second highest cost of housing after rent or mortgage payments. Many of the homes now requiring rehabilitation were not built to save gas or electricity, and aging of the physical structure has made them even more dependent on mechanical heating/cooling systems.

In Southern California, 50% of the energy is used for heating and cooling, 30% for heating water and 20% for lighting and appliances. Because heating and cooling represent such a large portion of energy used, improvements in the building envelope, designed to control heat loss and gain, represent the greatest opportunity for reduction of total energy use. As heat can be trapped or lost in the building envelope, the goal of most energy conservation measures is to increase the energy efficiency of the structure by: minimizing heat loss in winter, through walls, roof, windows and unwanted openings; maximizing heat gain in winter through windows; and minimizing heat gain, in summer through all structural components.

Energy conservation measures include: siting buildings to maximum energy efficiency; landscaping for summer shade and winter light; structural features that reduce energy loss; encouraging passive energy features in the design of homes; and active solar systems.

Existing housing stock in the City of Highland can also benefit from appropriate, energy conscious landscaping. However, the major methods to improve energy efficiency are as follows: attic insulation; weatherization (caulking/weather stripping windows and doors); fireplace dampers; water heater insulation; faucet flow restrictors; duct insulation; regular furnace and water heater servicing; floor insulation; fluorescent lighting; and solar water heaters.

Governmental Constraints

The State Housing Element Guidelines require that the Housing Element address public actions which might constrain the maintenance, improvement or development of housing. The major constraints imposed by government are decreasing federal and state commitments to housing, conflicting local responsibilities, development standards, fees, and processing time.

Housing

Decreasing Federal and State Commitment to Housing Programs

The emphasis placed by the federal and state governments on housing policies and funding has traditionally shifted with changing administrations and priorities. However, there has been a clear trend to de-emphasize federal and state housing programs over the past decade. During this time, Federal funding for housing programs has been sharply reduced. A concurrent reduction in state funding for housing occurred over the same time. This leaves local governments in California with a mandate to provide programs to facilitate housing for all economic segments of the community and without access to the funds to maintain such programs. Given the budgetary problems being experienced by both the federal and state governments, it is unlikely that increased funding for housing programs will be forthcoming in the near to mid-term future. It is possible that remaining housing programs will face further reductions in funding.

Conflicting Responsibilities of Local Government

The mandate that local governments provide for housing for all economic segments of the community is but one of many, often conflicting, responsibilities they face. In addition to dealing with issues of affordable housing and housing rehabilitation, cities must provide municipal services and facilities, protect the natural environment, ensure a high quality of development and urban design, reflect the concerns of City residents, and facilitate increases in local employment- and sales tax-generating uses. These responsibilities must be met in an era of increasingly tight budgets. As a result of state laws relating to municipal finance, reductions in federal and state funds for infrastructure and other programs, and changing public attitudes toward growth, local agencies have had to require that development internalize many costs which were once subsidized by various public funds. As a result, the cost of development inevitably increases and the American dream of owning a home becomes more difficult for those who are not fortunate to already own a home.

Along within the mandate for local governments to provide housing for all economic segments of the community is the democratic principle that government respect the desires of the governed. In many communities, "low and moderate income housing" is perceived as a problem to be avoided, rather than as a public responsibility, and individuals are electing local government on a platform of "no more apartments." The result is that community acceptance of multi-family development or low and moderate income housing is severely limited or non-existent.

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Development Standards and Land Use Controls

Development standards include zoning ordinances, subdivision ordinances, and building code requirements. The most far-reaching constraints are those contained in the city's zoning ordinance which is the most traditional tool used by a local jurisdiction to regulate the use of private land. Zoning regulates the use; density; floor area; setbacks; parking; and placement and mix of residential, commercial, and industrial projects to reflect the community's development goals and objectives. Zoning can reduce the supply of land available for residential development by placing land in open space or buffer zones, or by rezoning residential land for other uses. Zoning also regulates the intensity of residential land use through minimum lot size requirements. It is important that the minimum lot size not be too large because this would (a) reduce the potential supply of housing by limiting the number of units that can be built on a parcel of land, and would (b) increase the land cost per unit. High land costs may lead to increased construction cost for the developers.

Subdivision regulations which govern the division of a parcel of land into two or more smaller parcels can increase housing construction costs. The requirement that site improvements and amenities such as landscaping, underground utilities, and landscape maintenance districts be required in a subdivision can also escalate housing prices.

When analyzing development constraints, it is important to distinguish between those constraints that are excessive and unreasonable, and those designed for a particular purpose. The City, while encouraging housing, is also concerned about the living environment that is created. Standards for density, height, setbacks, undergrounding of utilities, and aesthetics are designed to create residential projects and areas that are functional and aesthetic. The conditional use permit process, although it lengthens approval time, is thought to be a reasonable compromise in allowing City residents input on projects which may affect their area and as a method of affording better project design.

Building codes regulate new construction and substantial rehabilitation. They are designed to ensure that adequate standards are met to protect against fire, collapse, unsanitary conditions and safety hazards.

Building costs do not appear to be unduly increased through local building codes. However, state regulations with respect to energy conservation, though perhaps cost effective in the long run, may add to initial construction costs.

Fees and Processing Time

There are two basic types of fees, those for the processing of development applications (subdivisions, conditional use permits, etc.), and those to pay for the costs associated with new development (dwelling unit, traffic signals, sewer connections, etc.; see Table II-G-36). The City also requires development impact fees when new development occurs (see Tables II-G-35, II-G-36, II-G-37, and II-G-38). Fees for plan check and building permits are determined based upon the valuation of the structure. The City is currently considering new development impact fees and fees for public services and facilities.

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The role that fees play in constraining the production of housing is difficult to measure, although they can affect housing prices in certain markets. The theory behind fees is that new development should bear its own costs, and that these costs should be spread as equitably as possible. State law requires that fees must bear a reasonable relationship to the actual costs incurred by the City, so that they do not become excessive. Even so, fees may add significantly to the cost of a housing unit, especially in those areas of the City that are largely undeveloped and require new infrastructure and services to be developed.

Before development can occur, it is necessary that certain permits, inspections, and approvals be obtained. These procedures, although necessary to insure the development is safe and in compliance with local regulations and building code requirements, can sometimes lead to delays in projects and subsequently increase costs. Moreover, excessive processing time may act as a constraint on the production of affordable housing, because it increases carrying costs to the developer for land, financing, etc.

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Table II-G-35
City Processing Fees For Residential Developments (1992)

Procedure/Document	Fees
Preliminary Project Review	\$240
Tentative Maps:	
Parcel Map	\$2,640
Tract Map	\$3,300 + lot fee
Final Maps:	
Parcel Map	\$1,650
Tract Map	\$1,800 + \$20 per lot
Minor Tract/Parcel Map Revision	\$1,125
General Plan Review	\$4,000 base fee
Specific Plan Review	\$6,750 + cumulative
Conditional Use Permit (Site approval)	\$3,315
Environmental Assessment Review	\$900 per application
Site Plan Review	\$500
Zone Change	\$2,500 + cumulative
Zoning Code Amendment Review	\$2,265
Lot Line Adjustment	\$935
Minor Deviation Review	\$1,400
Major Deviation Review	\$2,865
Plan Check	Pursuant to Uniform Building Code

Note: Fees listed in this table are current as of February 1992.

Table II-G-36
City Development Impact Fees*

	Estate	Single Family	Duplex	Multiple Family
Police	\$528	\$528	\$528	\$528
Fire	\$2,080	\$1,664	\$1,664	\$2,080
Municipal Facilities	\$1,539	\$1,539	\$1,539	\$1,539
Parks & Recreation	\$1,084	\$2,438	\$4,334	\$7,585
Storm Drains	\$3,457	\$4,487	\$4,709	\$4,978
Streets & Sidewalks	\$761	\$1,712	\$3,044	\$4,261
Traffic Controls	\$151	\$339	\$603	\$844
Bridges & Culverts	\$27	\$60	\$107	\$149
Street Lighting	\$407	\$407	\$407	\$407
Street Trees, Medians, and Landscaping	\$1,119	\$1,119	\$1,119	\$1,119
Total Acreage Charges (Per Net Acre)	\$11,153	\$14,293	\$18,054	\$23,490
Expansion Impact Fees ¹		Amount Per Sq. Ft.		
Single Family		\$1.84		
Duplex		\$2.01		
Multiple Family		\$1.83		

Source: City of Highland, Community Development Department, February 1992.

* Does not include properties within the East Highlands Ranch PUD.

¹ Under 500 square feet exempt.

Application Schedule

Table II-G-37
Conditional Use Permit and Tentative Maps¹

Application Schedule	Minimum Time Period
Initial meeting with Planning Division	
Preliminary Review of Application	30 days
Application Accepted	1 - 30 days
Environmental Review Initial Study	
Environmental Impact Report (EIR)	60 days to 10 months
Agency(s) Review	1 - 21 days
City Engineer, Fire Warden, etc.	
Agency(s) Comments Received	1 - 30 days
Preparation of Initial Study	
Environmental Determination	1 - 21 days
Preparation of Staff Report and other documents	
Technical Review Committee meeting	
Planning Commission Public Hearing	

Source: City of Highland Community Development Department, February 1992.

¹ Processing time for a tentative tract map application is approximately 80 days.

Table II-G-38
Application Schedule Parcel Map

Application Schedule	Minimum Time
Initial meeting with Planning Division	
Preliminary Review of Application	1 - 30 days
Application Accepted	1 - 30 days
Environmental Review Initial Study	
Environmental Impact Report (EIR)	60 days to 10 months
Agency(s) Review	1 - 21
City Engineer, Fire Warden, etc.	
Agency(s) Comments Received	
Environmental Determination	1 - 30 days
Planning Agency Decision	

Source: City of Highland, Community Development Department, February 1992.

Note: Processing time for a tentative parcel map/minor subdivision application can take between 50 to 80 days.

Public Housing

Article 34 of the California Constitution was adopted as an initiative by the voters in 1951, primarily in response to the increasing number of federally-funded, tax-exempt public housing projects. These projects were perceived to have negative social, economic, and aesthetic effects on local communities. Article 34 states that before a "state public body" can "develop, construct, or acquire in any manner" a "low-rent housing project", the local voters must approve the endeavor. All three "factors" must be present for the referendum to be required.

The Article 34 referendum requirement has often proved to be a psychological or actual barrier to the development of many forms of assisted low rent housing, particularly those intended for low income families. Because of the Article's vague language, communities have been reluctant to risk litigation by entering into the development of public housing for low and moderate income families. While there have been many successful referendums, failures have not been uncommon. As such, there is a tendency for local governments to avoid possible controversy with this type of ballot measure.

Non-Governmental Constraints

Various factors not under the control of government also affect the cost, supply and distribution of housing. These factors include land cost, construction costs, financing costs, speculation and miscellaneous costs.

Land and Construction Costs

The costs of improved land as a percentage of new home cost rose steadily in California during the 1970's, increasing from 21.0 percent to 27.8 percent in 1980. Land costs include the costs of raw land, site improvements, and all costs associated with obtaining government approvals. According to the City of San Bernardino's Housing element this proportion held true in 1988. Their housing element cites a Coldwell Banker commercial division land specialist in Riverside, that a typical acre of land in the Verdemon area of San Bernardino zoned for single family residential, would be priced between \$50,000 and \$60,000.

It is important to note that the price of residentially-zoned raw land is driven by the local housing costs. That is, the price of land does not drive the price of finished dwelling units, but in fact the price of comparable finished units drive the price of land. A typical breakdown of line item costs per unit is found in Table II-G-39. The example assumes a 40 acre site zoned for single family residential on 7,200 square foot lots.

Table II-G-39
Cost Breakout Estimate (August 1988)
New Single Family Dwelling Unit

Cost Item	Amount	Percent of Total
Raw land (7,200 s.f.)	\$15,000	16%
Impact ¹	\$14,000	15%
Materials & Labor	\$48,000	52%
Marketing	\$2,000	2%
Soft Costs (arch. & eng.)	\$2,000	2%
"Other"	\$11,000	13%
TOTAL	\$92,000	100%

Source: Coldwell Banker, Riverside

¹ City of Highland, see Table II-G-37.

Housing

Financing Costs

The cost of permanent mortgage financing for new and existing homes, as well as cost of new residential construction financing play a significant role in the affordability of housing. General inflation in the economy directly and indirectly causes housing prices to increase, which in turn raises finance costs. As the absolute price of a home increases, it adds to the mortgage amount which result in increases in the principal, interest, insurance, and taxes a home buyer must pay.

Speculation

Speculation in real estate occurs when real estate investors buy housing or land at "low prices" and then resell it at a much higher value within a short period of time. The problem is particularly acute if property rapidly changes hands from speculator to speculator. The price the eventual long term owner or consumer will pay could be highly inflated. Speculation affects not only the individual property, but the market climate in the area as a whole.

Because there are few statistics available on the rate of property turnover and the profit received from transactions, the amount of speculative activity and its impact on the City's rising housing costs is not clearly known at this time.

Housing Discrimination

As a characteristic of the housing market, discrimination may often present a barrier to providing an adequate choice of housing for all groups. Discrimination, which may be defined as prejudicial treatment applied categorically and not on the merit of the individual, takes many forms. Most forms of housing discrimination are a violation of state and federal laws, which prohibit discrimination against homeseekers for reasons of race, religion, national origin, ancestry, color, sex or marital status. Some of the types of discrimination encountered are refusal to rent or sell, inflated rents, higher prices, excessive deposits, unreasonable occupancy standards, limited choice among available units, and poor maintenance and repair. The target populations subject to discrimination are not limited to racial and ethnic minorities, but also include recipients of welfare and public assistance, families with young children, young unmarried persons, and the handicapped.

Redlining is also a form of discrimination, wherein home improvement and mortgage loans are not made available by a lending institution in lower-income or minority neighborhoods. Redlining involves the use of varying criteria for home financing based upon geographical differences. Often referred to as "neighborhood disinvestment", redlining practices include outright refusal by a lending institution to approve home purchase and rehabilitation loans, making loan conditions stricter (e.g., higher down payment, higher interest rates, higher closing cost), or appraising property below market value or with more rigid standards than used on comparable property in other neighborhoods. Older declining neighborhoods with high minority concentrations were often targets of redlining practices in the past. Redlining results in deterioration of neighborhoods, real estate speculation and housing abandonment. Most frequently affected are minorities and low income persons in general.

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Despite the fact that redlining is now illegal, this practice is still reported across the country. The Community Reinvestment Act (CRA) was passed by Congress in 1977 to help eliminate redlining. The CRA establishes a Congressional mandate that private, federally-chartered lending institutions must serve the convenience and credit needs of their surrounding communities. While the enforcement and sanction provisions of the CRA are relatively weak, it does provide for public disclosure of a lender's performance in meeting community credit needs through requirements for an annual CRA statement.

Where redlining practices are discovered, a sanction available and suggested for use by SCAG in the Regional Housing Element is the deposit of municipal funds in local lending institutions contingent upon acceptable loan performance in older, declining neighborhoods.

Infrastructure

Another factor adding to the cost of new construction is the cost of providing adequate infrastructure, major and local streets, curbs, gutters, sidewalks, water and sewer lines, street lighting, which is required to be built or installed in new development. In most cases, these improvements are dedicated to the City, which is then responsible for their maintenance. The cost of these facilities is borne by developers, added to the cost of new housing units, and eventually passed on to the home buyer or property owner. For further information please refer to the City of Highland General Plan, Public Services and Facilities Element.

Progress Report

Section 65588(a) provides that each local government shall review its housing element as frequently as appropriate to evaluate the following:

- The appropriateness of the housing goals, objectives, and policies in contributing to the attainment of the state housing goal.
- The effectiveness of the housing element in attainment of the community's housing goals and objectives.
- The progress of the city, county, or city and county, in implementation of the housing element.

At present, the City of Highland does not have a record of implementing housing programs, and cannot, therefore, report on their progress. These guidelines will be used when the housing element is updated for the 1994-1999 period.

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
Goal 1: A supply of housing suitable to meet the diverse needs of present and future residents and to support a healthy economic development in the City.					
<i>Objective 1.1: Development of an adequate supply of housing to meet the existing and future housing needs of a reasonable portion of the persons in the region who wish to live in Highland.</i>					
1.1.1	Where feasible within large scale residential developments, encourage that a range of housing types be provided which will appeal to a variety of household income groups.	On-going	Existing Program	City of Highland	Community Development
1.1.2	Where feasible, encourage that large scale commercial/office developments provide a residential component as part of an overall mixed use concept.	On-going	Existing Program	City of Highland	Community Development
1.1.3	Ensure that the residential development requirements included in the Highland Development Code do not unreasonably restrict residential development or unreasonably increase the cost of housing within the community.	On-going	Existing Program	City of Highland	Community Development
1.1.4	Prepare a public information packet or brochure summarizing the City's zoning and development requirements, development fees, and permit procedures.	Annually	Existing Program	City of Highland	Community Development
1.1.5	Establish a monitoring program which identifies the type and cost of housing being produced within Highland, as well as the availability of vacant land which can be used in the short-term (next five years) to accommodate a variety of housing types throughout the City; produce an annual report which identifies the revenues that are available to accomplish the programs outlined in this plan, and which sets production goals for housing that is affordable to very low, low, and moderate income households.	Within 12 months post General Plan adoption, then annually	Existing Program	City of Highland	Community Development

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Implementation Program

Strategy	Timing	Status	Responsible Agency	Funding
1.1.6 In order to ensure quality, well planned residential growth while meeting the City's regional housing responsibilities, review and analyze proposed residential projects, general plan amendments, and changes of zone for the short- and long-term effects on the adjacent neighborhood, the development of the City, and on regional housing needs. The review shall consider the balance between the proposed development and available infrastructure, the current mix of housing available in the City, environmental resources and hazards, and aesthetic considerations.	On-going	Existing Program	City of Highland	Community Development
1.1.7 Provide timely review of discretionary and non-discretionary residential development requests, with fees sufficient only to cover the actual costs (direct and overhead) incurred by the City. In order to do so, consider changes in case processing such as: • Computerize case records to allow for automated case tracking; • Schedule case processing time-tables to provide reasonable expectations in processing applications based upon available resources; • Hold public and agency review of EIR's concurrently so that processing times can be reduced.	Ongoing for the next 5 years	Existing Program	City of Highland	Public and private sources
1.1.8 Revise the zoning ordinance to limit development of single family dwellings within areas designated for multiple family use.	One year post General Plan adoption	New Program	City of Highland	Community Development
1.1.9 Through the development code and through permit processing, encourage use of innovative site development, and construction materials and techniques that both meet the intent of City ordinances and reduce the cost of site preparation or construction.	Ongoing	Existing Program	City of Highland	Community Development

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.1.10	Comply with California Government Code Section 65915 by providing a 25 percent density bonus, or equivalent financial incentive, to residential developers who agree to make a minimum of 20 percent of the units within the project affordable to households with an income of 80 percent of the County median income, make 10 percent of the units within the project affordable to households with an income of 50 percent of the County median income, or make 50 percent of the units available exclusively to senior citizens.	One year post General Plan adoption	New Program	City of Highland	Community Development
1.1.10.a	Revise the zoning ordinance to provide requirements for diversification of residential development as follows: • Developments which include more than 250 urban residential units are to provide a mix of dwelling unit types (e.g. single and multi-family); • Developments which include more than 500 urban residential units are to contribute to the City's balance of affordable housing at all income levels, with the intent that up to twenty percent (20%) of all new housing within the project be affordable to very low, low, and moderate income households. • Developers' contributions may be in the form of actual construction within the project itself, construction of units at another location consistent with the provisions of the General Plan, or contribution of appropriate in-lieu fees to a City low income housing fund.	One year post General Plan adoption	New program	City of Highland	Community Development
1.1.10.b	Provide for mobile homes on private lots in a manner consistent with the requirements of State law (SB 2827).	Ongoing	Existing Program	City of Highland	Community Development

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
1.1.10.c)	Facilitate the provision of single and multiple family dwelling units available to very low, low, and moderate income households through participation in the Mortgage Revenue Bond Program and issuance of Mortgage Credit Certificates. Encourage private sector participation in the provision of very low, low, and moderate cost housing by offering such programs to developers who provide at least 20 percent of the housing units within at prices which are affordable to very low, low, and moderate income households.	Ongoing	Existing Program	City of Highland	Community Development
Goal 2: Adequate housing opportunities for all economic segments of the community, regardless of age, race, ethnic background, national origin, religion, family size, marital status, physical conditions or any other arbitrary factors.					
Objective 2.1: Ensure that the existing supply of low and moderate cost housing within Highland does not diminish.					
2.1.1	Maintain existing number of subsidized units. Where proposed development projects or other discretionary actions of the City of Highland would reduce the number of existing subsidized dwelling units, ensure that appropriate offsets are provided as part of the proposed action.	Ongoing	New program	City of Highland	Community Development
2.1.1.a)	To avoid potential reduction in the supply of rental housing, prepare a condominium conversion ordinance which would limit the conversion of rental apartments to condominiums or cooperatives when the multi-family vacancy rate falls below four percent (4 percent).	Prepare ordinance one year post General Plan adoption	New program	City of Highland	Community Development
2.1.1.b)	Require that all successful conversion applicants participate in a relocation assistance program for displaced tenants.	Ongoing	New program	City of Highland	Community Development

Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
2.1.1.c)	Based on the provisions of Government Code Section 65863.7, consider requiring the submission of a report detailing the impacts of any proposed mobilehome park conversion to a nonresidential use concurrent with the filing of any discretionary permit on such property.	Ongoing	New program	City of Highland	Community Development
Objective 2.2: Prevent housing discrimination in Highland.					
2.2.1	Distribute information regarding the resolution of housing discrimination cases.	Ongoing	New program	City of Highland	Community Development
Objective 2.3: Cooperate with regional agencies to provide housing for the elderly, handicapped, and homeless.					
2.3.1	Investigate state, federal, and private programs designed to expand housing opportunities for all segments of society including the elderly and the handicapped. Determine the extent to which such programs are consistent with the goals and objectives of the Highland General Plan, and the extent to which such programs can be incorporated into future development within the City.	Upon adoption of the General Plan, then ongoing	New program	City of Highland	Community Development
2.3.2	Promote housing accessibility for handicapped and disabled persons by assigning funding priority, where feasible, in housing programs to rehabilitation cases in which accessibility improvements are planned.	Ongoing	New program	City of Highland	Community Development, Block Grant
2.3.3	Specifically encourage development of assisted rental housing for the elderly and handicapped through the use of appropriate density bonuses and subsidies.	Ongoing	New program	Redevelopment Agency	Rental assistance programs
2.3.4	Work with the San Bernardino County Housing Authority and nearby cities to establish a continuous emergency shelter program serving the western portion of the County.	Ongoing	New program	City of Highland and the County of San Bernardino	Rental assistance programs, multi-family residential, bond program, tax increment bonds

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Implementation Program

Strategy		Timing	Status	Responsible Agency	Funding
2.3.5	Specifically encourage development of housing for the elderly through the use of density bonuses, tax-exempt bonds, and land write-downs, combined with Federal and State housing subsidies.	Ongoing	New program	City of Highland and Redevelopment Agency	Rental assistance programs, multi-family residential, bond program, tax increment bonds
2.3.6	Revise the zoning ordinance to reduce parking requirements for senior citizen housing projects to a level consistent with the project's age restrictions.	Ongoing	New program	City of Highland	Community Development
2.3.7	Review apartment standards to reflect the needs of the elderly.	Ongoing	New program	City of Highland	Community Development
Goal 3: Preservation and conservation of existing housing stock and maintenance of property values and residents' quality of life.					
<i>Objective 3.1: Maintain the quality and integrity of existing residential neighborhoods.</i>					
3.1.1	Adopt a housing/neighborhood preservation program, including incentive programs to ensure ongoing maintenance, and retain a code enforcement officer to ensure compliance with conditions of project approval and with the City Code.	Eighteen months post General Plan adoption	New program	City of Highland	Community Development
3.1.2	Enact development code provisions which would permit the development of second units on a single family parcel only to the extent that the single family character of the neighborhood is protected, and to the extent that road, water, and sewer systems are capable of supporting such development.	One year post General Plan adoption	New program	City of Highland	Community Development
3.1.3	Determine the feasibility of establishing a Craftsman and Tool Lending Program, utilizing State funding if necessary.	Eighteen months post General Plan adoption	New program	City of Highland	Community Development
<i>Objective 3.2: Eliminate the existence of substandard housing in Highland within ten years by promoting the rehabilitation of an average of ten percent (10%) of the substandard housing units within Highland each year over the next ten years.</i>					
3.2.1	Investigate the availability of funds for the establishment of a housing rehabilitation program.	Ongoing	New program	City of Highland	Community Development

Implementation Program

	Strategy	Timing	Status	Responsible Agency	Funding
3.2.2	Establish a program of public information and technical assistance to encourage the continued maintenance of currently sound housing as neighborhoods within the City of Highland age.	Eighteen months post General Plan adoption	New program	City of Highland	Community Development
3.2.3	Utilize available housing rehabilitation/conservation funds to establish a fund to assist low and moderate households with painting, minor repairs, and general maintenance.	Ongoing	New program	Redevelopment Agency	20 percent tax increment set-aside funds
3.2.4	Work with the State Franchise Tax Board in order to enforce the provisions of California Revenue and Taxation Code Sections 17299 and 24436.5 which prohibit owners of substandard housing from claiming depreciation, amortization, mortgage interest, and property tax deductions on state income tax.	Ongoing	New program	City of Highland	Community Development

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APPENDICES

APPENDIX A
COMMUNITY DESIGN

Introduction

The purpose of the Community Design Appendix is to provide the public, designers, developers, city staff, and decisionmakers with a menu of suggestions to fulfill the design-related concepts included within the Highland General Plan. The following suggestions are not intended to be exhaustive, nor are they intended to be rigid requirements or guidelines to be applied in all circumstances. Rather, their purpose is to suggest possibilities and stimulate creative thought, thereby enhancing the quality of design throughout the Highland General Plan study area.

The Community Design Appendix is intended to establish controls by which good design is fostered. While the implementation of the guidelines within the design appendix will help to coordinate the image of the City into a cohesive whole, the intent of the design appendix is not to create a "theme" that imposes a single specific design theme throughout the city. They are intended to encourage good design that is compatible with adjacent development without severely restricting the owners/developers/designers preference or the dictates of economics regarding materials or style.

The Community Design Appendix establishes requirements for new and remodeled construction projects. While in some cases the suggestions are very specific, in other cases they will require interpretation of the City staff in cooperation with the project applicant. The information presented in this appendix is meant to offer suggestions by which good quality design can be understood and supported by all concerned.

Community Design Appendix Organization

The Community Design Appendix has been organized into the following subsections:

- Community Design Fundamentals and Terminology

- Project Design Components
 - Architectural Elements

- Development Design Concepts

- Site Design
 - Architecture
 - Landscape Design

- Land Use Design Concepts

- Residential

- Hillside Development
 - Historic Development
 - Office/Financial Establishments
 - Retail/Entertainment Establishments
 - Automotive

Community Design Appendix

Mall Developments
Industrial/Business Park

- Land Use Buffers and Transitions
- Water conservation and Reclamation Techniques.

Design Fundamentals and Terminology

Fundamentals

The evaluation of all projects will be based on the general fundamentals of design and specific design criteria presented in the Community Design Appendix. The following information is intended to be used as a checklist reminder to the applicant of design related items he/she should be ready to discuss with City staff upon project submittal.

By the nature of the subject, the Community Design Appendix cannot spell out every detail. It is the City's hope that the developer use both sensitivity and common sense to devise a functional and attractive project.

The fundamentals of design expressed in two themes and include:

Project Design Components consisting of:

- Unity
- Scale
- Rhythm

Architectural Elements consisting of:

- Proportion
- Balance
- Emphasis

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Design Presentation and Composition

All of the fundamentals listed above and described in the following sections should be brought together as a final composition in the design of each individual project. It is up to the applicant, designer, or builder to relate the elements used in the design of any project to their functional purpose, and to provide an easy to understand explanation to the City of how the design elements are used to create the appropriate project for the site. Therefore, the architectural merit of each project rests on the applicant's ability to provide sound reasoning for the design decisions made in a particular project, apart from the fact that the same design may have been appropriate in another location.

Project Design Components

Unity

Unity provides for its users a project with the best environment for the intended use (i.e., working, shopping, living, etc.). Unity is achieved when all components of a design such as massing, scale, textures, color, landscape, hardscape and site planning elements work together and complement each other.

Scale



Storefront elements and pedestrian level details provide an intimate scale.

Scale is the comparison of the relationship of one object to another. The scale of a any project design can be described in terms of its relationship to the average person. The relationship of a building, or portions of a building, to the average person is referred to as "human scale." The spectrum of relationships to human scale ranges from intimate to monumental. Intimate normally refers to details which are in keeping with the human scale, usually areas around eight to ten feet in size. These spaces feel intimate because of the relationship of a human being to the space. The distance of eight to ten feet is about the limit of normal voice communication between people and is also about the limit of an up-stretched arm reach of an adult. The

components of a building with an intimate scale are often small and include details which break those components into small units.

At the other end of the spectrum is monumental scale. Building types commonly which use the monumental scale include banks, churches, and civic and public institutional buildings. The components of this scale also reflect this grandness, with oversized double-door entries, 18-foot glass storefronts or two-story columns.

In Highland, many factors exhibit scale, including the buildings, landscape, and streetscape. Many components of the area represent a grand scale, including buildings, traffic signals, street lights, signs, and tall landscaping. The image of grandness is one important reason for the use of the larger scale, but function also contributes. Bowling alleys designed for large groups and major stores with

Community Design Appendix

huge inventories require large buildings. However, many of these buildings also can address human scale by using smaller scale components on the first floor, such as roof overhangs and smaller entry doors.

Landscape and hardscape elements can also bring human scale to a large building by introducing features such as a tree canopy, leaf textures, and fragrance. Plants can complement the scale of the architecture, as when large trees are used next to tall buildings, or small trees to accent a building component such as an entry.

Architectural Elements

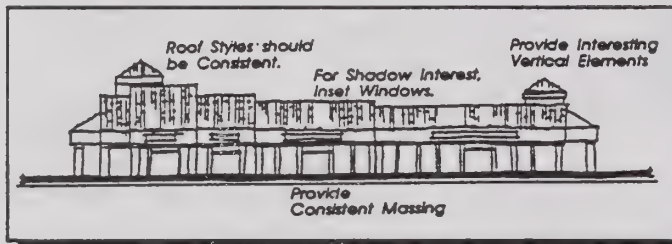
Rhythm

Rhythm, like scale, also describes the relationship of one building to another or the design elements of a building to each other. Rhythm relates to the spacing of elements and can be described in terms of proportion, balance and emphasis.

Proportion

Proportion deals with the ratio of dimension between elements. Proportion can describe as ratios which determine a buildings height to width relationship, as well as how such ratios relate to massing . In an urban context, proportion can be perceived in Highland by the relationship of buildings to the corresponding streetscape. Many of the older buildings in the City of Highland do not have consistent street setbacks, building placement, or lot size. The lack of consistent proportions attributes the City's appearance as a mixture of unrelated forms.

Balance



Projects should integrate Proportions, Balance, and Emphasis.

Balance can be described in terms of symmetrical and asymmetrical elements. An important feature of balance is that it is very often achieved by matching different elements which, when perceived in whole, display balance. The common perception that a building appears to be "lopsided" or "topheavy" are good examples of descriptions used when designs are

inherently out of balance. Lack of balance, however, should not be confused with the attempt to break up building forms to achieve a desired architectural expression.

Emphasis

Emphasis describes the use of elements which are meant to draw attention to themselves. Emphasis is an important feature in creating balance when using dissimilar elements. Canopies and balconies are examples of elements which, when emphasized property, can assist in presenting a balanced look.

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Emphasis also can be found within commercial developments or malls by the location of a more massive or monumental building, such a major department store anchor. This emphasis provides both a point of reference for the users as well as a directional element such as the emphasis at a store entrance or mall entrance.

Color

Color is an important design feature which should be considered carefully in both remodeling and new construction throughout the city. Color can affect the perception of other community design elements such as mass, scale, rhythm and textures. Use of color can also provide continuity to a project design consisting of dissimilar elements. Areas in a building to be considered when selecting colors include:

- The main body of the building
- The trim (all portions of a building that protrude from the main face, such as trim around windows or parapets that protrude above the roof overhang)
- Windows
- Roofs or roof overhangs.

Some buildings incorporate materials which provide color in their natural state, such as wood, brick, stone, or marble.

Landscape color, whether in foliage, flower or fruit, can be selected to harmonize or accent the architectural color palette. Landscape elements, however, should enhance and harmonize with architectural elements and not serve to hide or "tone down" poor quality or insensitive design features.

Texture

Texture refers to variations in the exterior of a building and may be described in terms of the roughness of the surface material, the patterns inherent in the material or the patterns in which the material is placed. Texture or the lack of texture, may influence the mass, scale and rhythm of a building. Texture also can add intimate scale to large building by the use of small, detailed patterns, such as brick masonry.

Texture in the landscape refers primarily to the size and density of a plant's leaves. Plants with large leaves carried openly on the branching systems are considered course-textures. Plants with small leaves carried densely on the branches create fine texture.

Surface Materials

Surface materials can be used to create a texture for a building; from the roughness of stone or a ribbed metal screen to the smoothness of marble or glass. Some materials, such as wood, may be either rough (such as wood shingles or resawn or pregrooved lumber) or smooth (such as clapboard siding).

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Pattern

The pattern of a material can also add texture and can be used to add character, scale and balance to a building. The lines of wood siding and the many types of brick bond are examples of how material can be placed in a pattern to create a texture. The natural texture of rough wood shingles exhibit texture by the nature of the material and by the pattern in which the shingles are placed.

Mass

Mass describes three dimensional forms, the simplest of which are cubes, boxes ("rectangular solids"), cylinders, pyramids, and cones. Buildings are rarely one of these simple forms, but generally are composites of varying types of masses. The composition is generally described as the "massing" of forms in a building. Buildings in the City which are contiguous or present one facade such as small strip malls appear more two-dimensional than buildings which are freestanding.

During the design process, massing is one of many aspects of form considered by the architect or designer, and can be the result of both exterior and interior design concepts. Exterior massing can identify an entry, denote a stairway, or simply create a desirable form. Interior spaces create and affect exterior mass, and exterior mass can affect the interior space.

Mass and massing also interacts with their opposite, open space. The lack of mass, or creation of perceived open space, can significantly affect the character of a building. Architects often call attention to a lack of mass, by defining the open space with low walls or railings.

Landscape architects also use massing in design such as in grouping of plants of different sizes and shapes. These areas may intended to be perceived as a wall, buffer, backdrop, or other opaque screen rather than as individual trees or shrubs. Plant masses can be used to fill a space or define the boundary of an open area, or extend the perceived form of an architectural element. They may also be used to create their own architectural element such as when used as formal hedges or topiary.

Development Design Concepts

Site Design

Site Organization

The organization of a project design can have a major influence on overall character of a project. When preparing plans for a new development, it is always best to think of the project as one element in a continuous series of projects. Since the new development is actually being fit into an existing framework comprised of a variety of older development, the following general considerations should influence site layout:

- Placement of buildings should consider the context of the surrounding development, the location of any incompatible land uses, the location of major traffic generators, as well as and analysis of a site's characteristics and particular influences.

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- Buildings should be sited in a manner that will complement adjacent buildings. Building sites should be developed in a coordinated manner to provide both order and diversity, and avoid a jumbled, confused pattern of development.
- Whenever possible, new commercial buildings should be clustered. This provides opportunities to create plazas or pedestrian malls and prevents long "barracks-like" rows of buildings. When clustering is impractical, a visual link between separate buildings should be established. This link can be accomplished through the use of an arcade system, trellis, or other open structure and textured walkways.
- Recognize the importance of spaces between buildings as "outdoor rooms" on the site. Outdoor spaces should have clear, recognizable shapes that reflect careful planning and are not simply "left over" area between buildings.
- Arrival points create a visual sense of entry and should be included in all developments. They should include: enriched paving, raised medians, signage, and other features as appropriate.

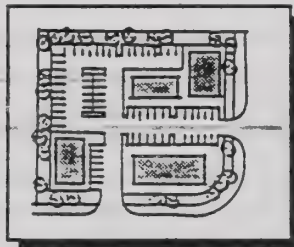
Parking and Circulation

Parking lot design can be a critical factor in the success or failure of commercial and multi-family residential uses in the city. In considering the possibilities for developing a new parking area, the following factors should be analyzed:

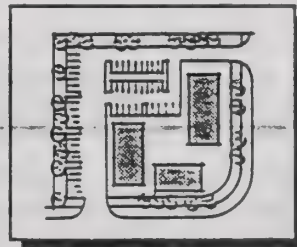
- Ingress and egress with consideration to possible conflicts with on-street traffic.
- Pedestrian and vehicular conflicts.
- On-site circulation and service vehicle zones.
- The overall configuration and appearance of the parking area.

Onsite traffic patterns should minimize impacts on surrounding streets and property by integrating the following concepts into project designs:

- In areas of high commercial concentrations and high residential densities, consolidate driveway locations by using shared access and circulation whenever possible.



Discouraged



Preferred

- In commercial uses, use internal circulation routes to create reciprocal easements between properties.

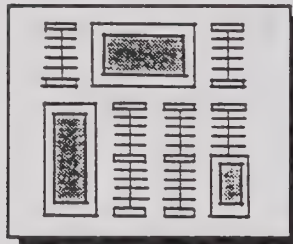
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- Residential multi-family projects should break up parking areas into smaller areas which feed off of an internal roadway system. Parking locations should provide logical pedestrian connections to associated units.
- Strive to create on-site circulation systems which are logical and easy to understand from the users' point of view.
- Parking spaces should be kept off the internal circulation drives, at project entrance points.
- Internal roadways should be designed so that direct access is available to all structures visible from a particular parking area in order to eliminate unnecessary vehicle travel, and to improve emergency response.

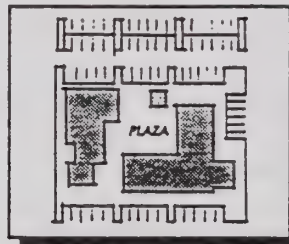
Pedestrian Accessibility

Parking areas should be designed in a manner which links the building to the street system as an extension of the pedestrian environment. This can be accomplished by using design features such as walkways with enhanced paving, trellis structures, and/or landscaping treatments.

Wide expanses of parking lot between the sidewalk and the front of buildings are discouraged. The provision of safe, easily identifiable pedestrian access through the parking lot from multiple access points should be the rule in parking lot designs.



Do not separate buildings with parking lots.



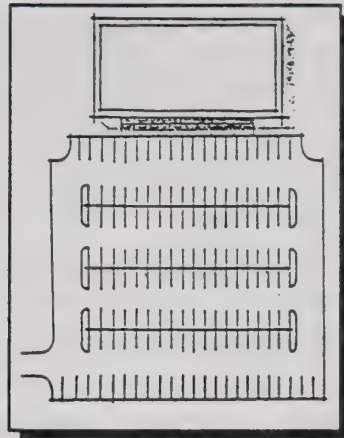
Cluster buildings to create pedestrian areas.

All new developments should support efforts to integrate air emissions reduction concepts into parking designs by providing pedestrian connections to public transit areas such as bus stops, turnout areas, school bus stop areas, and park & ride facilities where appropriate.

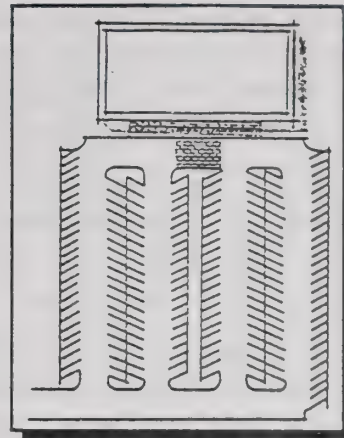
Design commercial centers which are adjacent to residential uses such that direct pedestrian access is available from the residential area into the commercial center. Such pedestrian access should also be designed so as to prevent through vehicular traffic.

Where large open parking areas are necessary, areas should be designed so that pedestrians walk parallel to moving cars. Minimize the need for pedestrians to walk between parked cars, or to cross parking aisles and landscape areas as they walk to their destination.

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Discouraged



Preferred

Handicap Accessibility

Incorporate provisions into the parking design which accommodate the physically disabled as per State requirements, such as the location and design of handicapped parking stalls, ramps, handrails, and the like.

Transportation Demand Management Features

In order to encourage the elimination of unnecessary vehicle trips, the following site design consideration should be incorporated into public and private developments which will generate 25 or more employees. This list is not all inclusive, and other design features that encourage the use of alternative commute modes may be included, and are encouraged.

- Not less than ten percent (10%) of the parking spaces planned for a commercial, industrial, or other employment-generating development site (exclusive of handicapped, visitor, and delivery parking) should be set aside for the exclusive use of carpools and vanpools. These spaces should be located in the most advantageous and reasonable location closest to the primary employee entry to the building or site.
- Where ten (10) or more car/van pool spaces are provided, it is desirable that the spaces be covered. Car/van pool spaces should be marked with the words "Carpool Only," and restrictions of the use of these spaces should be enforced by the tenant-employer(s).
- For any project, complex, or building which will generate 100 or more employees, carpool/vanpool staging areas should be designed and marked for use by employees being dropped or at their work site. This means designing a location, convenient to the primary employee entrance, that carpools and vanpools can safely stop and discharge or board passengers. This generally requires design of a passenger loading zone of the public thoroughfare and designating the area as such.

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- Bicycle parking should be provided within employee-generating uses at a rate of one bicycle parking space for each 20 required automobile spaces. The location should be safe, well-lit, and of adequate space to accommodate bicycle users. Bicycle parking can be in the form of sets, racks, or enclosed lockers.
- A major incentive for employees to bicycle is the provision of shower facilities, and should be considered for sites anticipating high bicycle usage.

Safety

Insure that landscaping permits adequate sight distance for motorists and pedestrians entering and exiting the site, and does not interfere with parking and circulation. Along utility rights-of-way, landscaping should not disrupt service or access to overhead or underground equipment.

Interior circulation should provide logical points of access, should not conflict with other existing or planned access points, and shall comply with all applicable City access regulations.

Screening and Buffering

Even where every effort is expended to solve existing site related issues with solid design concepts, it is recognized that screening and buffering of incompatible uses is appropriate. This technique, however, must be used in such a way as to integrate the design of the screen or buffer into the overall project design to the extent feasible. The following are suggestions for the use of screening and buffering techniques which may be implemented on projects throughout the City of Highland.

Fences and Walls

Fences and walls should be discouraged unless they are needed for a specific screening, safety, or sound attenuation purpose.

The use of any fencing or walls should be consistent with the overall design theme of the development or adjoining existing developments

- Where they are needed, fences or walls should relate to both the site being developed and surrounding developments, open spaces, streets, and pedestrian ways.
- Fencing and walls should respect existing view corridors to the extent possible.

Fences and walls should incorporate landscape elements and changes in materials, color, or texture in order to prevent graffiti; undue glare, heat, or reflection; or aesthetic inconsistencies.

Development projects within Highland should provide adequate screening so that the development is shielded from the negative impacts of adjacent uses, and neighboring properties are shielded from the adverse external effects of that development.

- Onsite utilities and ancillary equipment should be located in an inconspicuous area or vaulted underground away from public view.
- When unable to be vaulted, equipment should be screened.

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Wall and Fence Alternatives

The City of Highland encourages the use of alternative methods of screening for residential development in order that the community's design quality is enhanced. The following alternatives can be used to replace the requirement for walls and fences unless solid barriers are needed for safety, noise or screening purposes.

- The incorporation of wrought iron fencing into the solid wall designs can break up the linear stretches of blank surface. This technique in combination with climbing vines and other landscaping create the illusion of the wall or fence being an integral component of the landscape design.
- New multi-family developments should consider rear facades which front public rights-of-way as the primary elevation in the design of the project. Street facades which are designed to include landscape berms and tree planting are recommended over solid walls or fences.
- Solid walls and fences should be avoided in rural residential areas except around courtyards, patios or pool areas where privacy is needed. Open fencing types should be the rule in rural areas to maintain a feeling of openness and space.
- Bermed landscaping is encouraged to be used as an alternative to the development of wall and fences.

Theme Walls and Fences

Where provision of a wall or fence cannot be avoided, the establishment of theme walls or fences is encouraged. However, such walls should be coordinated with perimeter landscape design and provide aesthetic enhancement to the project without creating a "walled in" appearance.

- In rural development areas, use wall and fence materials consistent with the established theme of the area. Avoid high solid fencing in favor of low walls, low split rail, range or other type of open fencing.
- The use of any fencing or walls should be consistent with the overall design theme of the development or adjoining existing developments.

Solid Wall Buffers

Where construction of a solid wall which will be visible along a public street is necessary, provide landscaping such as trees, shrubs, or vines to soften the appearance of the wall, and to reduce undue glare, heat, and reflection. Ensure that fencing is constructed of durable material which will resist the damaging effects of wind rain and irrigation.

Lighting

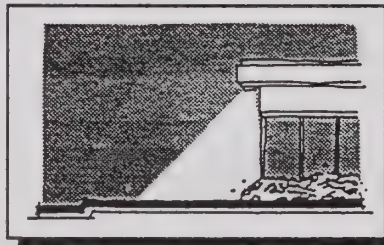
Nighttime illumination is important in creating an interesting and safe living and working environment. In addition, lighting can serve to highlight building design features, add emphasis to prominent entrances and plazas, and to create an ambiance of vitality and security.

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Exterior lighting should relate to the design elements of a building. It should be designed to highlight architectural divisions, element, and details.

All exterior lighting should be designed as part of the overall project architectural design concept. Fixtures, standards and all exposed accessories should be harmonious with the building design and visual environment. In addition, the following design suggestions should be taken into considerations when developing lighting plans:

- Lighting fixtures should be attractively designed to complement the overall design theme of the project within which they are located. The location, color and intensity of private lighting should also be related and complementary to public lighting.
- Energy conservation should be considered in developing lighting plans using the latest technical and operational energy conservation concepts.
- The average maintained horizontal illumination for a pedestrian walkway should conform to Table CDA-2.
- Lighting designs should emphasize safety by taking into considerations the following suggestions:
 - Adequate onsite lighting should be provided to ensure a safe environment, but not cause nuisance levels of light or glare on adjacent properties.



Confine light spread to within site boundaries

- Commercial areas should provide adequate lighting for the security and safety of onsite parking, loading and pedestrian areas as well as adequate screening where such aesthetic treatment is required and can be provided without compromising the surveillance of such areas for safety and security purposes.
- For security, it is often more effective to the vertical face of a building instead of the horizontal foreground.
- Lighting should improve the visual identification of on-site structures.
- Within commercial areas, lighting can also help create a festive atmosphere by outlining buildings.
- The height of lighting, the single most important factor in determining the quality of the light and the consequent ambience of the site should be categorized according to Table CDA-1.

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Table CDA-1
Site Lighting

Light Type	Mounting Height	
	Average	Range
Decorative	--	
Vehicular Use	34' average	20' - 50'
General Site	25' average	20' - 30'
Pedestrian*	12' average	10' - 15'
Feature		0' - 3' - 6" 0" - 40"

* See Table CDA-2 for security areas.

Table CDA-2
Site Lighting

Walkway	Average Area (Footcandles) 12'	Security Area (Footcandles)	
		Low Mount 9' to 15'	High Mount 15' to 30'
Commercial	0.9	2.0	4.0
Intermediate	0.6	1.0	2.0
Residential	0.2	0.4	0.8

Source: Illuminating Engineering Society

Site Furnishings

Elements placed in a project for comfort, convenience, information, circulation control, protection and uses enjoyment are collectively referred to as site furnishings. The major grouping of site furnishings include:

- Seating.
- Shelter (kiosk, picnic, awnings, pergola, arbor).
- Convenience elements (drinking fountains, bike racks, trash receptacles, mail deposit boxes, vending).

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- Information elements (directional, locational, identification, display).
- Lighting.
- Traffic control and protection.
- Paving.
- Seasonal elements (tents and awnings, vending, outdoor furniture, planters, decorative banners)
- Special features (unique site elements used for commemorative, cultural or public art purposes).

The relative sizes and design of site furnishings should be compatible with the buildings to which they relate.

Site furnishing should be constructed of durable, easily maintained materials that will not fade, rust, rot or otherwise deteriorate.

Where private and public paved areas join, such as plazas, outdoor cafes and galleries, the surfaces of each should be compatible.

Seating should be sited so as to be sheltered from the wind, take advantage of views, situated back of circulation paths and to provide a variety of options for pedestrians such as sunlight, shade, quiet, activity, formality, informality.

Shelters, because they often serve as focal points of the site, they should be readily visible, easily accessible, sited to allow for views, adjacent to major pedestrian routes.

Shelters should be provided to serve as protection against inclement weather, a focal point for site activities and as a transitional area between outdoors and indoors.

Convenience elements should be easily recognizable, sited to reduce clutter and placed to facilitate easy access.

Outdoor information should be formatted and placed within easy view of either the pedestrian or the motorist.

Where pedestrian walkways intersect with driveway, etc., traffic control and protection elements should be provided to warn both pedestrians and motorists of each other's presence. Techniques include paving material changes, bollards, grade changes.

Seasonal elements can significantly enliven a place. Their appearance signals an event. These elements include temporary structures, vending wagons, outdoor furniture, planting tubs and decorative banners.

Seasonal elements require a flexible site layout, work well when they augment established year-round facilities, are sited to conform to basic circulation of the site, and are readily visible and accessible.

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Special features are unique site elements or public art which commemorate significant cultural and social events for the community. They may be used as a focal point or a feature for a place within a place.

Special features should incorporate indigenous materials and local historical and local historical and for cultural resources.

Architecture

The guidelines in this section relate to the physical appearance and configuration of buildings in general. Each element of a building should be appropriate, however, to the architectural design style, an the building use. Residential, Commercial, Industrial/Business Park buildings have certain characteristics and special needs. Height, scale, proportion, material/finishes, color, lighting, signage, landscaping and style are combined. The following are guidelines which will help the City maintain a desirable level of quality design without stifling new innovative design solutions.

Style

Architectural styles and themes should be compatible with the surrounding environment. To assure individuality however among projects, each project is encouraged to vary the design of the elements enough to avoid monotony and create interest, yet, remain compatible.

Variety of shapes, forms, and heights are good ways to create interest.

Architectural styles with a theme should demonstrate the characteristics of that style. (See "Architectural Styles".)

Materials and Finishes

New and innovative building materials that meet or exceed minimum Energy and Building Code requirements, where it can be shown that such innovations will reduce the cost of residential construction, are encouraged.

Color

All paint products, awning fabric or other color elements shall be durable and fade resistant and shall be recommended by the manufacturer for the proposed use and location.

- The use of monochromatic and complementary accent and trim colors is recommended.
- The use of bold primary colors (pure reds, yellows blues) are not recommended for building facades except for accent or theme elements.
- The use of bright or garish colors (i.e., fluorescent "hot" or "day-glow" colors) are strongly discouraged.
- Using building materials in their natural state is strongly recommended.

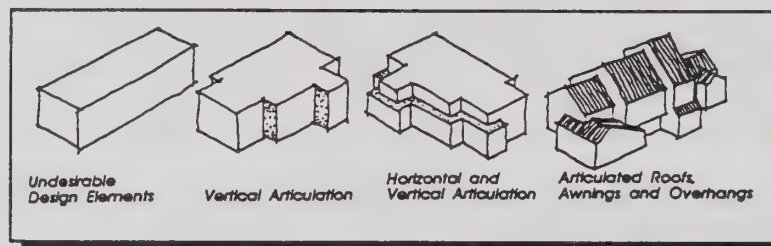
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- The painting of exposed and previously unpainted brick is not permitted. The water proofing of exposed red brick surfaces is also discouraged.
- The use of colors to express individuality and identity within a cohesive and attractive framework is encouraged. Such colors should be in harmony with other colors used in the area.

Massing

Scale of the proposed development should not overpower neighboring developments. By using variations in building height, roof line, facade articulation, grade definition, the overall perceived mass of the proposed project can be effectively reduced. Other techniques which can be used to achieve appropriate scale relationships include:

- Vary building setback and massing of large structures along major streets to provide visual interest.
- Detail multi-story buildings so as to reduce their vertical appearance.
- Provide a greater level of architectural details at the ground level than at upper levels.



Architectural articulation may be used to reduce massing.

Landscape Design

Each project's landscaping should be designed to reinforce the concept of the following design elements: Arrival, Entry, Point-of-Emphasis, Place, Place Within a Place, Link, and Exit should. The following section describes each of these elements as they relate to landscaping. Although the Plant lists which follow the design elements suggest appropriate plant materials for the area, in many cases similar plants are interchangeable. What is important, however, is the articulation of each of the elements; for example a California Pepper (*Schinus Molle*) could be used as an entry tree as long as the arrival tree is different in shape and form, conversely using a California Pepper (*Schinus Molle*) as an arrival tree and a different shape and form tree as an entry tree would be appropriate. It is how the plants are used within those schemes that will determine the success of the design.

Arrival

Arrival, being the first impression a site visitor experiences is very important. It occurs as a person approaches the front edge of a project which he/she can distinguish separate from adjacent projects.

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Typically, planting is more of a formal refined or manicured nature than the interior of the site and will build/transition into the next element, entry, as it gets closer.

Entry

Entry is the point where one enters into a site. It must be easily identifiable from the arrival zone. Planting must therefore call attention to this area as well as site monumentation. Changes or transitions in plant height, color, texture and amount of detail strengthen the identity of this element.

A change in paving material could help in identifying the entry as well as encourage reduced vehicular speeds. This is an opportunity to do something special by the nature of the location of "entry", to really create an impressionable experience for those entering the site.

Entries should be scaled in relation to the level of entry-major, minor. They should include features appropriate to the type of entry, for example, signage, lighting, plant material, etc.

Emphasis

After passing through the entry, to be able to relate to the place, and where you are going within, a point of emphasis must be established and reinforced by landscaping. This determines the hierarchy and context of a site which orients the user. Points of emphasis can be designed by massing color, strong landscape statements such as axially located tree lines, sculptural statements, or highlighted architectural features. Accent type plantings should be used and the scale of plantings and detail should relate to the pedestrian.

Sense of Place

Sense of place is the main purpose of the project or development. Planting design should maintain the quality established at the arrival. Parking areas should complement the buildings and open space and be treated as part of the overall design. Tightly spaced canopy trees are desired to minimize or soften the visual impact of large expanses of paved areas.

Pedestrian Links

Many developments have more than one place in them and they must be connected. Also in situations where it is appropriate, sites adjacent to each other may want to be connected. These connections are "links" and are important to the circulation of site. Often they are designed as greenbelts, meandering sidewalks, or plaza areas. Whatever form they take, the landscaping should define the location of the link, and accommodate the scale, security/safety, and mood of the transition from one place to another.

Exit

Exits, often ignored, are the impression made on the site visitor before his/her departure. The opportunity to really sell the quality of a development comes here when the developer/designer doesn't forget this last impression. Exit, landscape design, respects the notion that leaving the project is as important as entering it. The landscape design should be as detailed and thoughtful as entry design.

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Overall

Landscaping in private development areas should also be compatible with the overall public area landscaping plans.

Landscaping and open spaces should be provided as an integral part of project design to enhance building design, public views, and interior spaces; provide buffers and transitions as needed; and facilitate energy conservation.

The selected combination of landscape materials should be arranged in a harmonious manner.

- The combination of landscape materials may include rock groundcover not to exceed 20 percent of the total of any landscaped area.
- Where appropriate landscaping should create an abundance of shade for pedestrians and bicyclists during summer months. When selecting trees, in such cases, maximum shade potential should be emphasized. Deciduous tree species should be included to allow penetration of sunlight during the winter months.

Landscape design should be coordinated with drainage plans for individual projects to maximize percolation of surface water from the site. Scale designs in landscaped and turf areas should be employed to slow down runoff and maximize percolation.

Landscaping should be compatible with the shape and topography of the site and the architectural characteristics of the structures on the site. Compatible scale of plantings and buildings is especially important.

Landscaping should be used to relieve the appearance of solid, unbroken elevations.

Each landscaping plan should provide for all the functional aspects of urban landscaping such as drainage, erosion prevention, wind protection, provision of shade, sound absorption, dust abatement and reduction of glare.

Plant materials should be tolerant to urban conditions, resistant to diseases and insect infestation. Plant materials should be maintained in excellent health and appearance at all times, by a regular maintenance and care routine.

Plants should be selected and maintained so they achieve a desired height and size for the purpose selected within a reasonable period of time after planting. Trees and other plant materials should be of adequate size when planted.

Landscaped areas should have a combination of trees, shrubs, vines, groundcover and turf as appropriate and compatible with the surrounding environmental and project design theme.

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Land Use Design Concepts

Single Family Residential Subdivisions

It is the intent of the General Plan to encourage a variety of residential development types which are both innovative in design and compatible with surrounding neighborhoods. The following represent components of single family residential subdivision design the City of Highland feels should be encouraged in all residential development.

Street Scene

Residential units within new single family neighborhoods are encouraged to provide recognizable variations in their front and side yard setbacks.

Residential developments should maximize a feeling of openness by curving streets and orienting road axes to open space areas and areas of visual interest.

Architectural Variety

The use of appropriate and simple roof forms, including shed, gable, and hip roofs, alone or in combination, to achieve a variety of roof lines along the streetscape is encouraged; avoid unarticulated flat roofs.

To reduce architectural massing at street corners and to create congruity where a two-story structure is next to a one-story, the incorporation of a one-story element into the two-story building is desirable.



Reduce massing at street corners.

Design small lot single family projects in such a manner as to group dwellings around common open space and/or recreational features.

If custom homes are not proposed, residential tracts shall provide a variety of floor plans and elevations should be offered as shown in Table CDA-3. Applicants should provide required floor plans at the time of application submittal.

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Table CDA-3
Residential Floor Plan & Elevations Guidelines

Number of Single Family Dwellings	Minimum Number of Footprints ¹	Minimum Number of Elevations/Footprint
< 10	3	2
11 - 20	3	3
21 - 40	4	3
41 - 60	5	4
61 - 80	6	4
81 - 100	7	4
> 100	1 additional for each 20 dwellings over 100	

¹ Includes reverse footprints

Multi-Family Residential

Multi-family development adds to the diversity of housing types in the community. It is the intent of the General Plan to encourage a variety of multi-family residential development types which are both innovative in design and compatible with surrounding neighborhoods. The following represent components of multi-family residential design the City of Highland feels should be encouraged.

Parking Design

In higher density projects with tuck-under parking and/or opposing garages or carports, individual units should be turned and oriented to avoid the monotony of parking corridors. Alternately, parking areas should be staggered and appropriately landscaped.

Privacy and Security

The function and quality of multi-family residential developments should be maintained by the orientation of buildings and living spaces at right angles to each other for privacy, and by adequate provision of provide open space areas such as patios and balconies, and a porch or porch-like space at the front door of each unit.

No more than eight units should be served by one entry. Ground floor dwellings should have a front and back entry, one of which is formal for the use of guests and is oriented to their arrival points.

Individual units within a project should be distinguishable from each other through the use of some symbolic representation; a logo, a number, letter or combination of the three.

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Design for Tenant Needs

Multi-family residential projects should be designed for the needs of families with small children, the disabled, and the elderly. For example:

Design Features for Children's Needs	Design Features for Disabled Needs/Elderly Needs
• open space • tot lots • handrails • ground floor • units should have enclosed yards or patios • distinct auto/pedestrian separation	• ramps • parking close to units • minimum elevation change • elevators • special landscaping with a lot of color, variety • private outside hardscape areas

Residential Infill Development

It is recognized that the City of Highland has many areas which can be considered to have residential parcels which are either underdeveloped or vacant. As development of such parcels occurs, the character of new development should be consistent with that of the surrounding neighborhood and not detract from the common streetscape.

Infill Development Types

For the purposes of this section residential infill is generally considered to be, but not limited to the following development types:

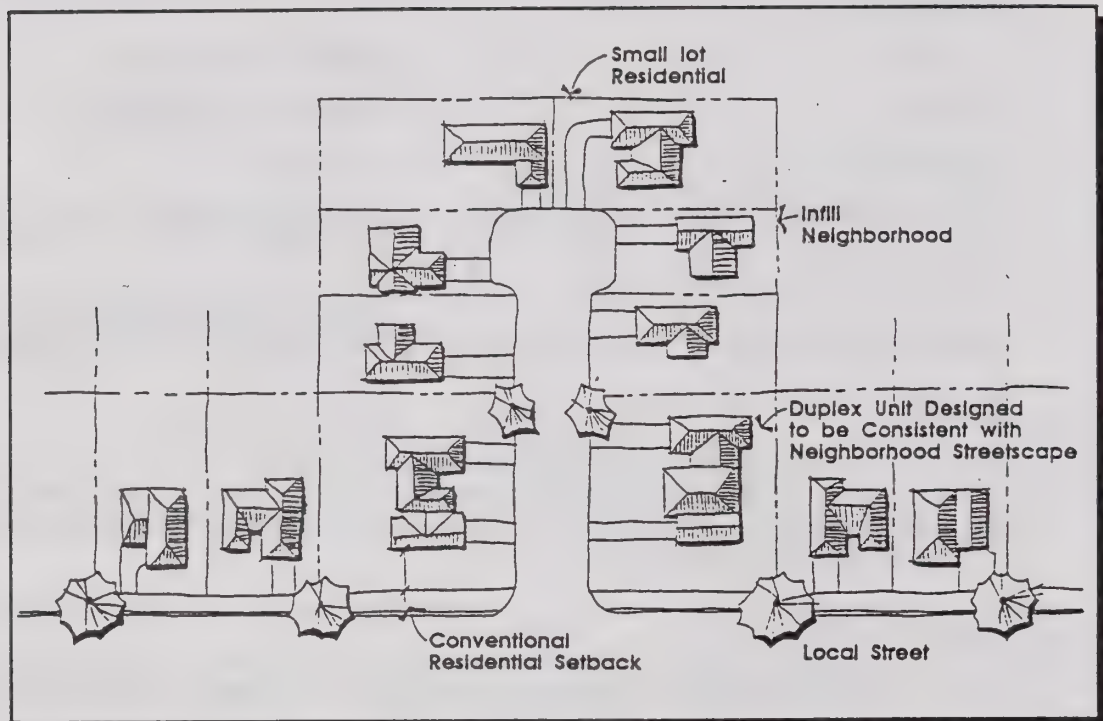
- *Granny Flat:* An additional unit that is constructed with the intent of housing a senior citizen who is related to those living in the main dwelling.
- *Garage Apartment:* A second dwelling unit built atop a detached garage structure.
- *Detached Residential Units:* Single family detached units which are built behind an existing residence as rental units.
- *Small Lot Single Family:* Single family units developed on smaller lots.

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Design Considerations

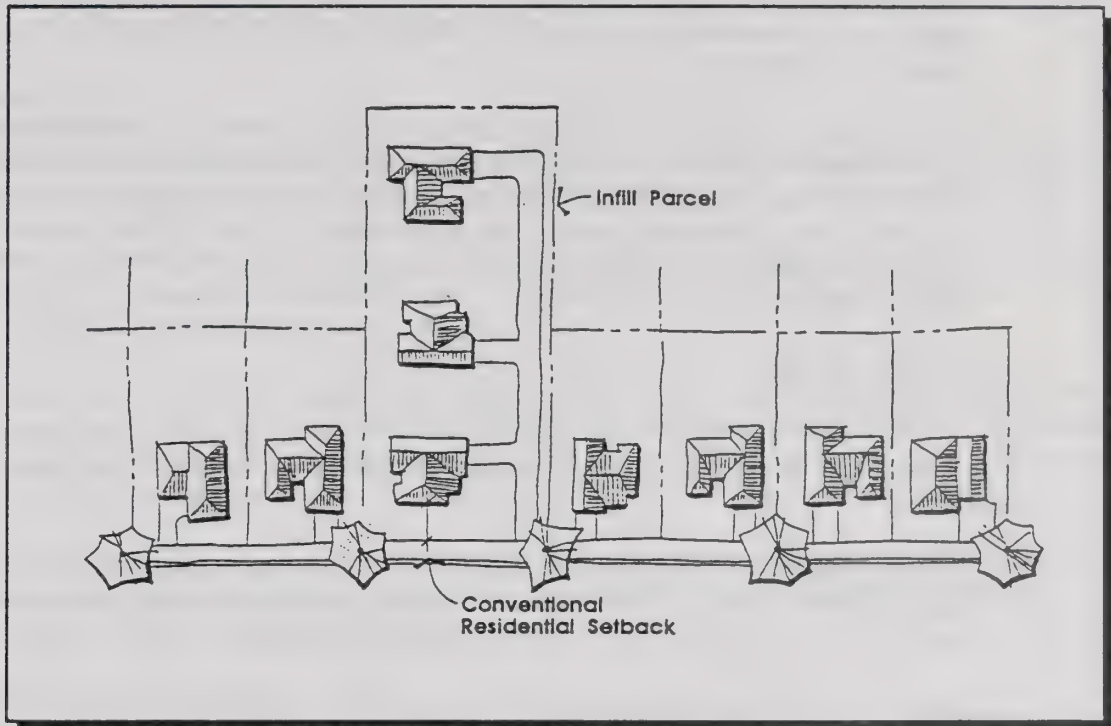
When designing for residential infill developments, the following concepts should be considered:

- **Density Transitions:** Density increases should be transitioned from the streetscape to ensure that the scale of the development is not imposed on the neighborhood streetscape.
- **Respect Setbacks:** Residential infill on vacant parcels should respect existing setbacks along the streetscape.



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- *Design Compatibility:* New infill developments should be designed to be compatible with surrounding development so as to enhance and not detract from the character of the existing neighborhood.



Office/Financial Establishments

When designing for Office and Financial establishments, the following concepts should be considered:

- *Distinctive massing:* These building types offer the best opportunity for varied building massing and such variation is encouraged to add interest to the area.
- *Intimate scale:* Emphasize personal service, reflected by designs which provide intimate scale at entries, on windows, door and add decorative trims in coordination with windows, doors and building scale.
- *Visual impression:* Limit Visual impression of height by use of roof treatments, varying the plane of exterior walls and/or stepping back upper floors where feasible.

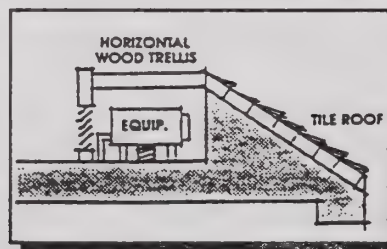
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- *Public views:* Each wall surface of a freestanding office, or financial establishment which is accessible to the public should be treated as a primary facade and should be designed for public view. These areas should also be landscaped in accord with the landscaping standards defined elsewhere in this document. Wall surfaces which do not involve entries, drive-up windows, or view windows must also be treated as a primary facade where the placement on the lot permits public view. Landscaping and screening of areas needed for services, such as deliveries or trash collection is also required.
- *Varied textures:* Office, and financial establishments are encouraged to be trendsetters in the use of varied textures and materials. Where adjacent development emphasizes stucco or solid surface materials, the new building is encouraged to include alternative treatments where these promote an intimate scale, particularly wood shingles, clapboard or brick. Where adjacent development includes such small-scaled, textured materials, the new design should be compatible with the existing materials.

Retail/Entertainment Establishments

When designing for retail and entertainment establishments, the following concepts should be considered:

- *Related colors:* Buildings should be reviewed in terms of colors used. Colors used on a proposed food service or retail commercial building should be related to those dominant in the design. The use of accent colors for trim areas is encouraged for these buildings.
- *Screen mechanical equipment:* All rooftop mechanical equipment should be located at a distance from the edge of the building so as not be visible from the pedestrian level. If such units must be placed in a visible location for functional reasons, they should be screened in a manner consistent with the building facade. Since many rooftops in the project are also visible from the freeway, all rooftop equipment should be at least screened from view using fencing or other appropriate materials.



One example of equipment screening.

- *Retail scale of components:* The scale of proposed buildings and building components should remain consistent with the existing adjacent buildings. Building components such as windows, doors, and storefront components should be considered in respect to: each other; the entire facade; and the scale of these elements found in other nearby buildings.

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- *Limit visual impression of height:* Although the maximum height of proposed projects is to be consistent with the existing zoning, the facades should be designed to be in harmony with the maximum height predominant within the area. In general, new buildings exceeding the predominant height of the area should step back the stories exceeding the predominant height by a minimum of 20 feet from the primary facade.

Automotive

For the items discussed above, the standards for automotive establishments are the same as those of Retail and Entertainment Establishments. In addition concepts should also be considered as follows:

- *Service area screening:* Automotive service areas should not be located to be visible from the primary frontage. Such areas should be located either behind the main facade or in a wing perpendicular to the primary facade.
- *Auto storage areas screening:* Automobiles awaiting repairs should be stored in areas screened from public view by the building facade or by solid fencing and/or landscaping. Automobiles or trucks available for sale should be partially screened from the street by the use of landscape materials or low berms.
- *Maintain similar proportions:* The proportion of the major elements of a building should be complementary to the proportions found between similar elements in buildings in the area. These elements include windows.

Mall Developments

This category includes buildings housing more than three uses or tenants which are designed to provide an internal pedestrian circulation between uses. Depending on the building's size and design these buildings may have some of the design problems of strip development or may have problems with the mixtures of mass and scale.

Mall Design criteria

Mall developments exhibit several problems which are not shared by other design categories. These include:

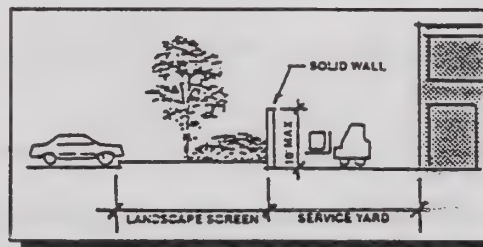
- A need to provide an identity for the mall as a whole and for major anchors, if any.
- A need to provide an extensive floor area, often under one roof, with internal pedestrian circulation.
- A need to provide landscaping to unify the structures and to provide intimate scale at entries.
- A tendency to provide a "faceless" character to the street due to the inward design focused on pedestrian activities.

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Industrial/Business Park

Within the constraints of utility and economic feasibility, manufacturing and industrial buildings should display architectural statements that are aesthetically pleasing, and integrate the following design concepts:

- *Contemporary Designs:* Although no particular "style" is suggested the use of contemporary, clean architectural expressions are encouraged.
- *Discourage blank facades:* Blank building elevations plotted parallel to major streets should be discouraged.
- *Well defined entries:* Entries into industrial buildings should be well defined through the use of projections, recesses, entry space frames, pergolas, colonnades, raised planters, seating elements, surface texture/enhanced paving elements, low-level lighting bollards, or other elements designed to announce entrances into these structures. Blank "unarticulated" building entries are discouraged.
- *Screening of service and work areas:* Service and outside work areas which are visible to the public should include the following screen concepts into the project design:
 - All manufacturing and industrial uses should be adequately screened to reduce glare, noise, dust and vibrations.
 - Truck doors and trash storage areas should be closed off by roll-down or another appropriate type of door.
 - These doors should be arranged in an organized manner, integrated within the overall design of the project, and screened from public view.
 - Dock and trash storage should be arranged in an organized manner, integrated within the overall design of the project, and screened from public view.



Screen work areas.

- Mechanical plants and distribution networks should be minimized and contained within efficient roof-top penthouses.

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- *Roof mounted equipment screening:* Roof-mounted equipment should be screened from public view in the following manner:
 - All roof screens must be solid and continuous. Equipment must be covered by continuous grills or louvers.
 - Roof screens should be sheathed in a matching or complementary material and may include metal panels, aluminum, copper, or ceramic tile.
 - Picket fence screening is shall be strongly discouraged.
- *Buffering:* All manufacturing and industrial uses adjacent to residential land uses, either existing or proposed, should include a buffer zone or noise attenuation wall to reduce outside noise levels at the property line to an acceptable level.
- *Parking and Loading:* Onsite parking and loading areas within manufacturing and industrial developments should be designated in such a manner as to provide direct access to major or local industrial streets, while prohibiting primary access through residential areas.

Hillside Development

To further clarify the options available for hillside development and to ensure that aesthetics of the local hillsides are protected, the following section provides concepts on which hillside projects should be based.

Hillside Grading

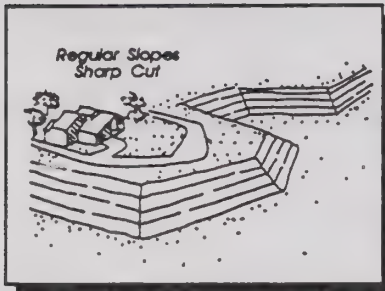
Hillside grading designs should incorporate contour grading concepts which reduce the appearance of the disruption of the natural hillside to the extent feasible. Building form and siting should respond to the topography and be consistent with significant landforms. When building on a hillside, the architectural form of the structure or structures should reflect the underlying topographic form and retain the integrity of the natural slope.

Hillside Development Character

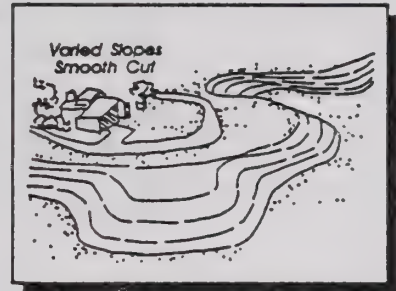
Hillside development within the City is expected to establish a general character with its surroundings. The slope of the hillside is not the only limiting factor of hillside design, however, the degree of slope is often the most prominent design constraint when developing a hillside project. Table CDA-1 should be used as a guide to what the City expects when hillside projects are proposed on different hillside slope ratios.

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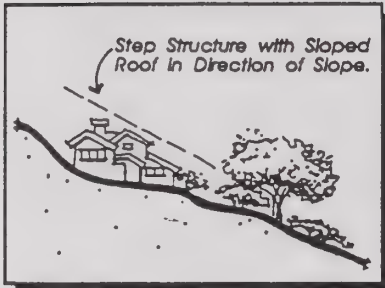
Figure CDA-1
Hillside Development Concepts



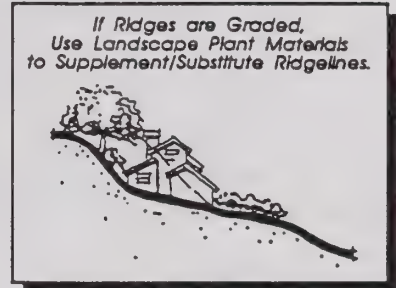
Unacceptable: Daylight line, lot depth and size, and slope gradient have harsh manufactured appearance.



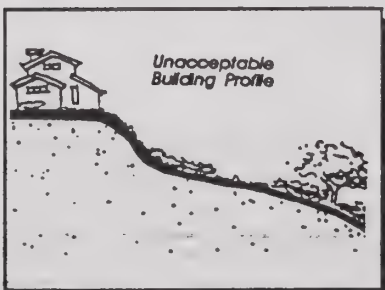
Acceptable: Edges of cut slopes are contoured to match existing topography.



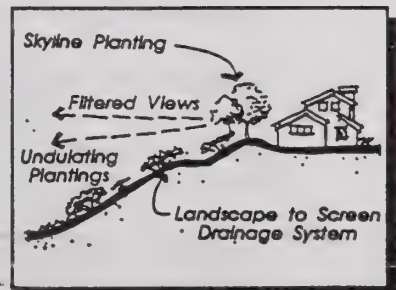
Sufficient cut to create minimum development pad. Building and roofline respect the line of the original slope.



Acceptable: Development is stepped to match profile of the original ridgeline and incorporates landscaping to soften building profiles.



Unacceptable: Profile of building not in concert with line slope or ridgeline.



Acceptable: At a ridge or crest of a hill, views from new structures are preserved without disrupting or changing the character of views from below.

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Table CDA-4
Hillside Development Character

Percent Slope	Development Characteristic/Intensity
Less than 10%	Generally considered to be minimum slope areas, and as such may be mass graded for development. Significant environmental features may be required to be preserved.
10% to 15%	Mass-grading may occur, but grading must utilize contour grading techniques. Significant environmental features may be required to be preserved.
15% to 25%	All grading shall be contoured and sensitive to significant environmental features. Mass grading is not appropriate. The amount of grading allowed shall be based on what is minimally required to establish custom building pads and entry access.
25% and above	Grading and development within this slope category is generally discouraged except where the following findings can be incorporated into the hillside design: • <i>Linkage/Access:</i> The area in excess of 25% slope is minimal and represents the only means of access or linkage to another area of less than 25% slope which otherwise could not be developed. • <i>Custom Homesites:</i> Dwellings have been designed to fit the terrain so that there are no significant external signs of grading through the use of stepped foundations, small retaining walls, post and beam construction, or similar custom design features. • <i>Driveway Access:</i> Access to the site is designed to blend with natural terrain as much as possible while maintaining a less than 15% grade. • <i>Aesthetics:</i> Visual impacts are not found to be significant. • <i>Safety:</i> No adverse impacts to the public health safety and welfare are present.

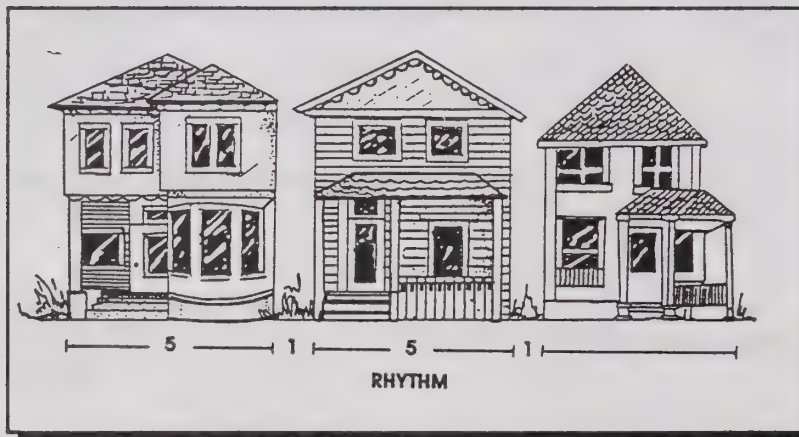
Community Design Appendix

Historic Development

Use the following suggested design principles and standards to ensure maximum compatibility of new and remodeled construction with older buildings in the historical district.



Height and Scale -- It is important that new buildings be constructed to a height within a reasonable average height of existing adjacent buildings within established historical districts with a long life expectancy.



Rhythm of Spacing of Buildings on Street -- Moving past a sequence of buildings, one experiences a rhythm of recurrent building masses to spaces between them. This rhythm is necessary to create an added element of harmony in a neighborhood's architecture.

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Material -- Wood Siding
Texture -- Smooth
Color -- Green, White Trim

Relationship of Materials -- A variety of materials, when properly used, can add to the distinctiveness of a neighborhood. Common materials are brick, stone, stucco, wood, or other material. Used properly, materials can enhance desired neighborhood qualities such as compatibility, continuity, similarity, harmony, etc.

Relationship to Textures -- The texture of a building is an important factor in the overall appearance of a neighborhood. The predominant texture may be smooth (stucco), or rough (brick with tooled joints), or horizontal wood siding, or other textures. Whatever texture is used, its appearance must be considered in relation to the neighborhood to ensure a compatible blending with other styles.

Relationship to Colors -- The proper application of a color scheme to a building or a series of buildings can highlight important features and increase their overall appearance. Accent or blending colors on building details is also desirable in creating compatibility of neighboring structures.



Relationship of Architectural Details -- Similarity of architectural detail may be accomplished by the use of cornices, lintels, arches, wrought iron work, chimneys, etc. This similarity of detail is extremely important in ensuring a compatible appearance in new construction.



Relationship of Roof Shapes -- The majority of buildings may have gable, mansard, hip, or flat roofs, or others. Roofs are an important factor in the overall design of a building to help relate items such as height and scale to those of adjacent structures.



walls and landscaping continuous

Walls of Continuity -- Physical ingredients such as brick walls, wrought iron fences, evergreen landscape masses, building facades, or combinations of these, form continuous, cohesive walls of enclosure along the street. This factor helps produce a cohesiveness in a neighborhood.

Relationships of Landscaping -- There may be a predominance of a particular quality and quantity of landscaping. The concern here is more with mass and continuity. It is important that landscaping be placed to emphasize design, rather than becoming an obscuring factor.



Directional Expression of Front Elevations -- Structural shape, placement of openings, and architectural details may give a predominantly vertical, horizontal, or a non-directional character to the building's facade. Although the front elevation of two adjacent, existing buildings may be different, their overall appearance can be made more compatible when remodeled by proper use of detail, color, materials, etc.

Land Use Buffers and Transition

Although the General Plan Land Use Map has been designed to reduce the number of land use incompatibilities which might be created as the result of new development, the need for buffers and transitions between land uses is inevitable. The primary requirements for buffers and transitions will occur along the boundaries between urban and rural lands, higher and lower intensity residential uses, commercial/industrial and residential uses, and between developed and natural areas.

Land Use Buffers

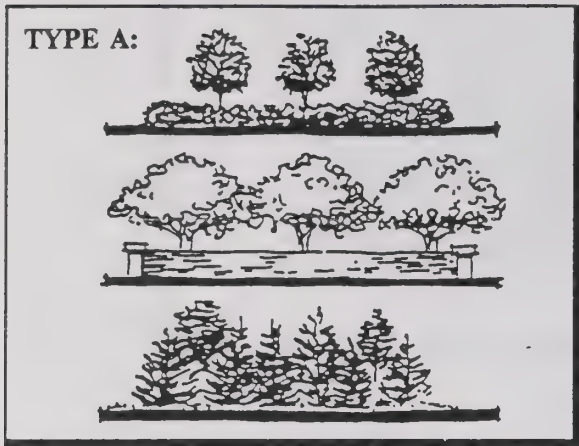
Buffering techniques illustrated in Table CDA-2 should be used whenever there is a potential for minor use incompatibility, visual degradation or other unwanted effect which cannot be completely eliminated through other means.

Urban-Rural Land Use Transitions

The General Plan Land Use Districts clearly sets standards for the designation of urban and rural uses within the study area. Where urban and rural uses meet, buffer and transitional concepts are intended to be used to soften edges created by these two differing land use types. Although there are a number of ways this may be accomplished, the following concepts detail techniques which may be employed:

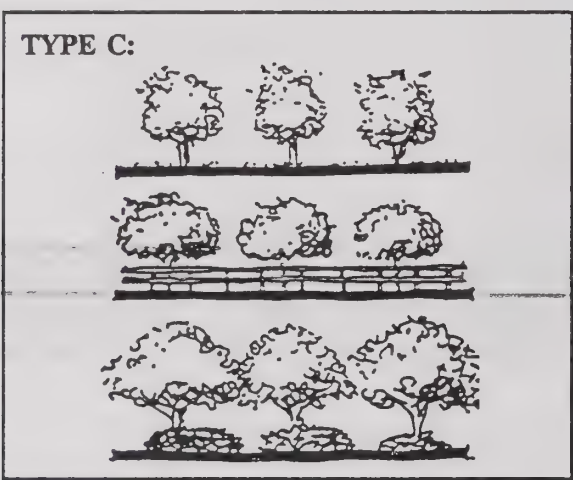
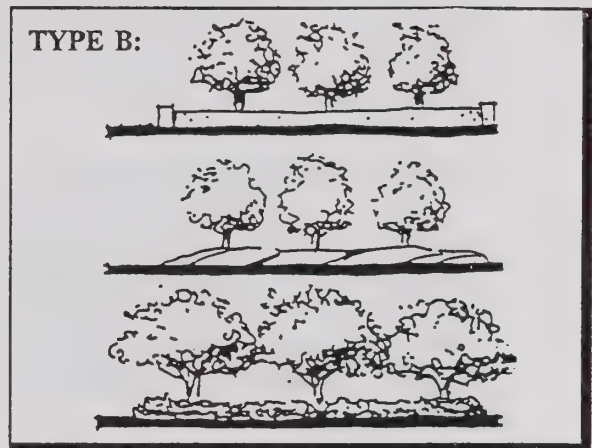
Community Design Appendix

Figure CDA-2
Urban/Rural Land Use Buffers



Opaque Screen, Type A: An opaque screen is intended to exclude all visual contact between uses and to create a strong impression of special separation. The opaque screen may be composed of a wall, fence, or densely planted vegetative. Compliance of planted vegetative screens will be judged on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. The opaque portion of the screen must be opaque in all seasons of the year. At maturity, the portion of intermittent visual obstructions should not contain any completely unobstructed openings more than 10 feet wide.

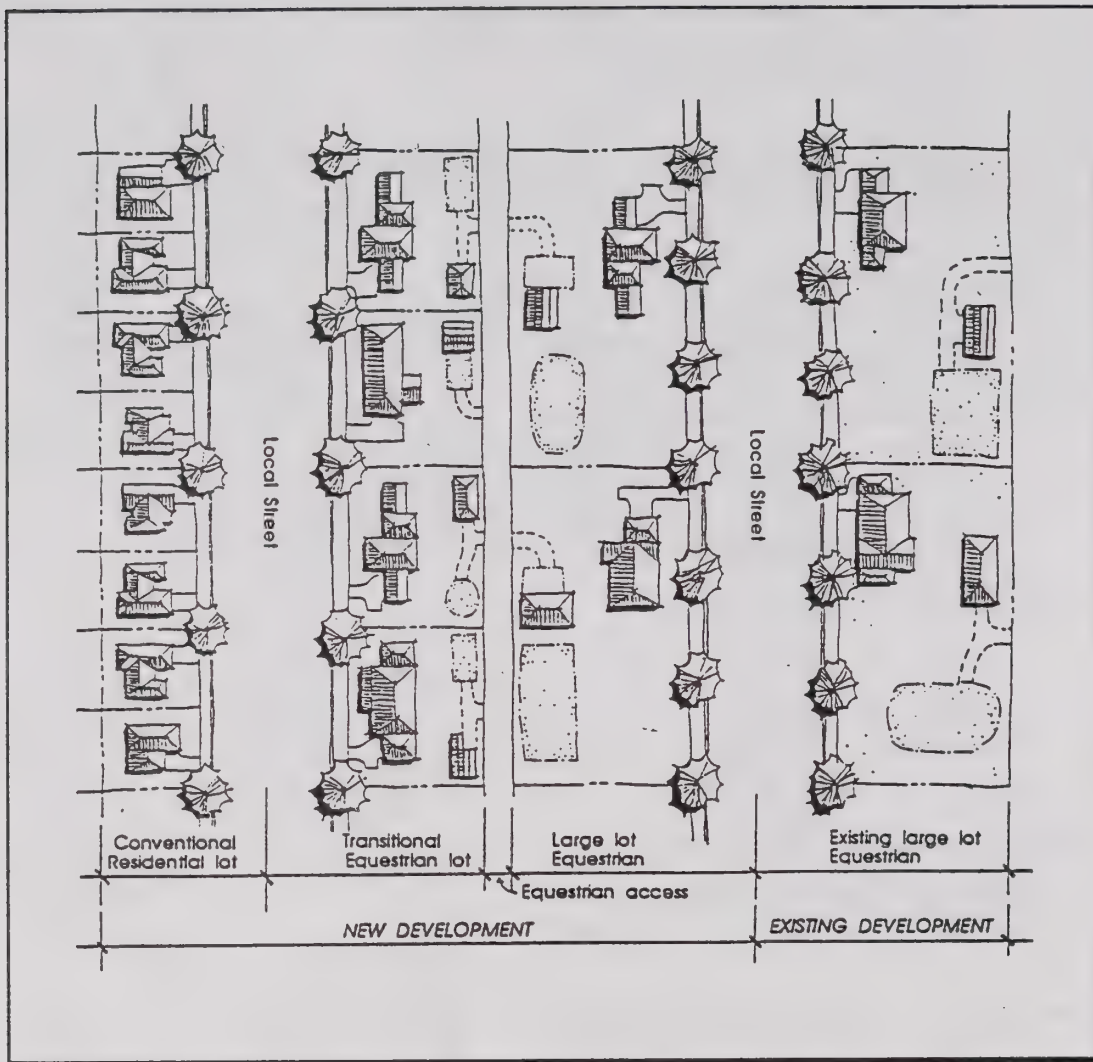
Semi-Opaque Screen, Type B: The semi-opaque screen is intended to partially block visual contact between uses and to create a strong impression of the separation of spaces. The semi-opaque screen may be composed of a wall, fence, landscaped earth berm, or planted vegetation. Compliance of planted vegetative screens will be judged on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. At maturity, the portion of intermittent visual obstructions should not contain any completely unobstructed openings more than 15 feet wide.



Broken Screen, Type C: The broken screen is intended to create the impression of a separation of spaces without necessarily eliminating visual contact between the spaces. It may be composed of a wall, fence, landscaped earth berm, planted vegetation or existing vegetation. Compliance of planted vegetative screens or natural vegetation will be judged on the basis of the average mature height and density of foliage of the subject species, or field observation of existing vegetation. The screen may contain deciduous plants.

- *Transition at street frontage:* Where differing residential land use densities oppose each other along street frontages, several options which preserve the character of the street frontage may be used. Any of these options along with standards for setbacks, fencing and landscaping would eliminate the need to establish visual buffers between uses and thus preserving the a more open feeling to the neighborhood.
- *Transition at property lines:* A more traditional method of transition occurs at the rear property line of land uses. This concept relieves the street frontage of having to conform to one density or another but leaves little room for the buffering of incompatible activities which might occur.
- *Open Space transitions:* When available, open space can be used to create opportunities for natural appearing transitions, especially when naturally occurring aspects of the site such as hills, arroyos or significant rock outcroppings can be integrated into the project design.
- *Equestrian/Non-Equestrian Transitions:* When equestrian uses abut non-equestrian uses, both density and distance become determining factors in the design of residential development. As is illustrated on Figure CDA-3, Concepts A-D, density transitions should be employed. However, the keeping of large animals requires that animal keeping facilities be buffered from other non-animal keeping properties (see Figure CDA-3, Concept E, below).

Concept E Equestrian Density Transition Example



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Residential Transitions

In many parts of the community, transitions from rural residential densities to standard residential densities can produce an inconsistent appearance along street frontages. In order to avoid these sharp density changes the Community Design Appendix suggests that the following series of options which can be used to implement strategies which designate urban/rural residential density transitions be considered (see Figure CDA-3).

Commercial/Industrial to Residential Transitions

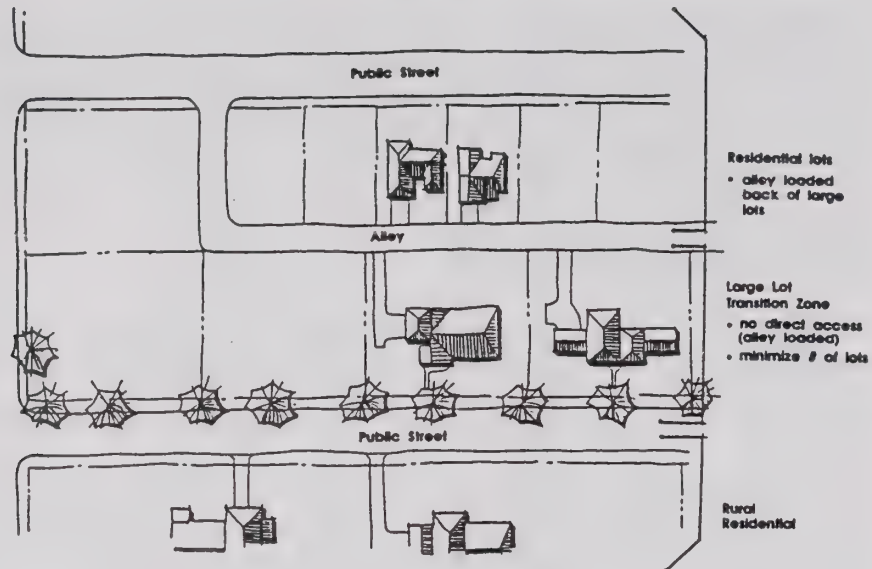
It is generally desirable that commercial/industrial uses not share a common property line. Thus, where possible, commercial/industrial and residential uses have been separated by a street on the General Plan Land Use Map. In these cases, the residential use should generally have an inward focus away from the adjacent commercial or industrial use.

The transition between commercial and residential uses, however, traditionally occurs along the rear property lines, with the commercial center's loading and trash areas at the rear of the commercial parcel. However, the concept of opening up commercial centers to pedestrian access from adjacent residential areas will tend to work against this traditional arrangement, forcing loading, and trash collection areas into sheltered areas within the site. Such arrangements will work to enhance the compatibility of commercial and residential uses. Where internalizing loading and trash collection areas cannot be accomplished, a landscaped separation should be provided and maintained between the rear wall of the commercial center and the loading/trash collection area. In many communities, these landscaped buffer areas have been planted outside of the perimeter wall, and been incorporated into adjacent residential parcels.

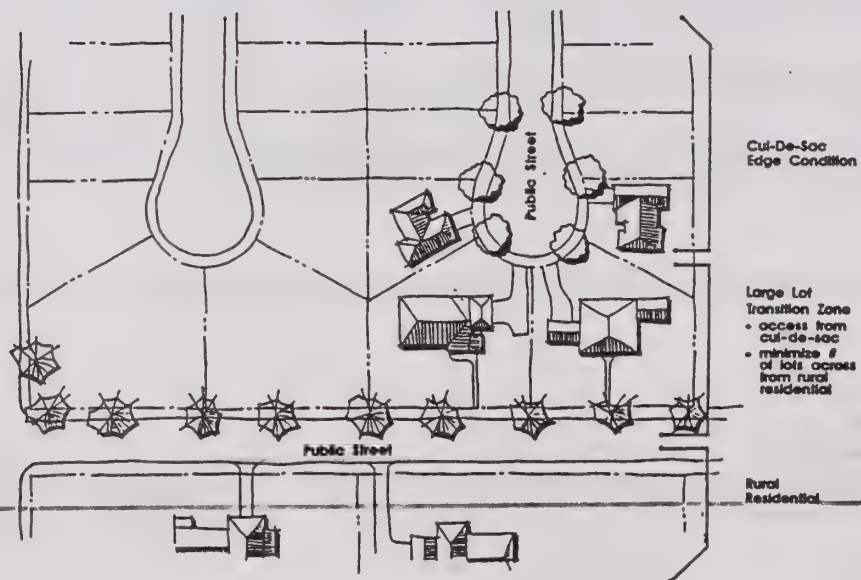
Natural Open Space Transitions

Where development is adjacent to hillside or open space areas an effort should be made to provide a natural transition which is sensitive to the adjacent natural areas.

Figure CDA-3
Urban/Rural Residential Transitions



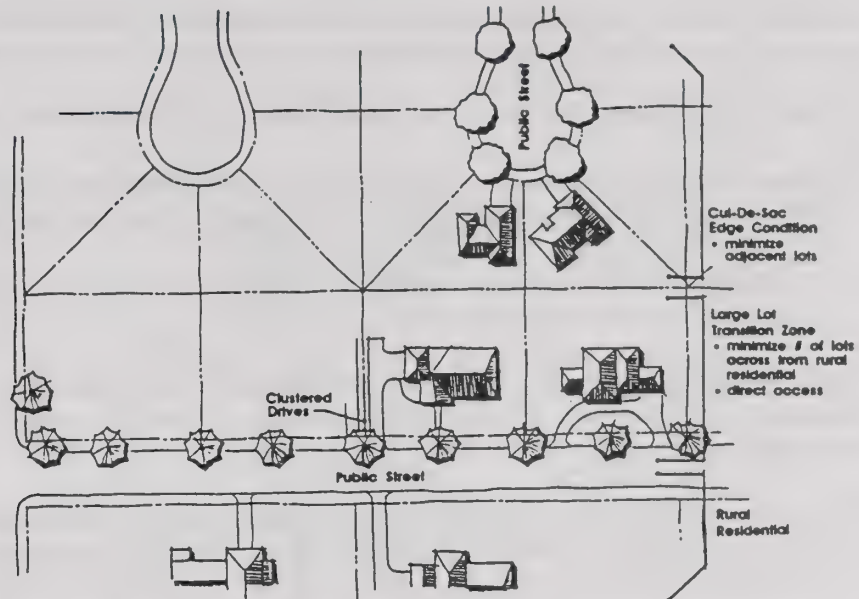
Concept A



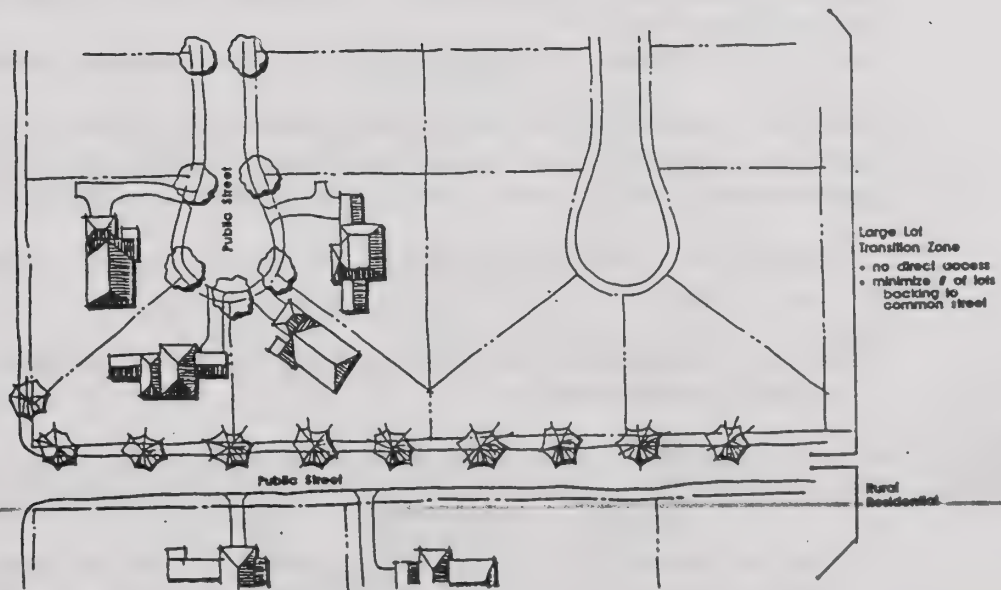
Concept B

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Figure CDA-3 (Cont'd)
Urban/Rural Residential Transitions



Concept C



Concept D

Community Design Appendix

Agricultural Buffers

As urban and rural residential uses incrementally encroach upon the existing outlying agricultural operations, the following land use compatibility concerns will need to be addressed:

- Will the proposal create a land use pattern which is inconsistent with surrounding development?
- Does the proposal encourage a logical extension of infrastructure from adjacent parcels capable of serving future planned land uses without traversing large undeveloped areas?
- Is the proposal part of a larger physical area which if not planned as an overall unit will lead to a disjointed area development pattern?

Where portions of the General Plan study area share a common boundary with existing agricultural properties, the following concepts for transitions and buffers should also be considered into development proposals:

- *Roadway Buffer and Separation:* Where possible, adjacent developments should locate roadways at the perimeter of the project and adjacent to agricultural properties so as to maintain at least a 100 foot buffer area from the nearest residential structure. Buffers should include street right-of-way, landscape area and appropriate drainage facilities (see Figure CDA-4.) For the protection of residents and to reduce the potential for vandalism, open fencing must be provided between buffer areas and all agricultural operations.
- *Residential Setback:* At locations where new residential development backs to agricultural operations, a distance of 100 feet should be maintained from the residence to the any property line (see Figure CDA-5.)
Solid wall and landscaped berm combinations are preferred buffering techniques.
- *Citrus Grove Transitions:* The incorporation of existing citrus groves into new development as primary landscaping, "natural" landscape statements, or passive open space is encouraged. It is important that if existing groves are used in this manner that the following criteria be met:
 - That the trees are adequately maintained until such time as their ownership is transferred to the end buyer.
 - That the preserved trees are free from disease or other maladies which would make them a unusable or non fruit-bearing.
 - That information concerning the care and maintenance of the particular tree specimen be given to the end buyer.
 - That trees placed in the public right-of-way be approved for that purpose and that all trees within common areas are provided with the assurance of a continual maintenance mechanism, homeowners association, or special landscape district.

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Figure CDA-4
Roadway Buffer and Separation

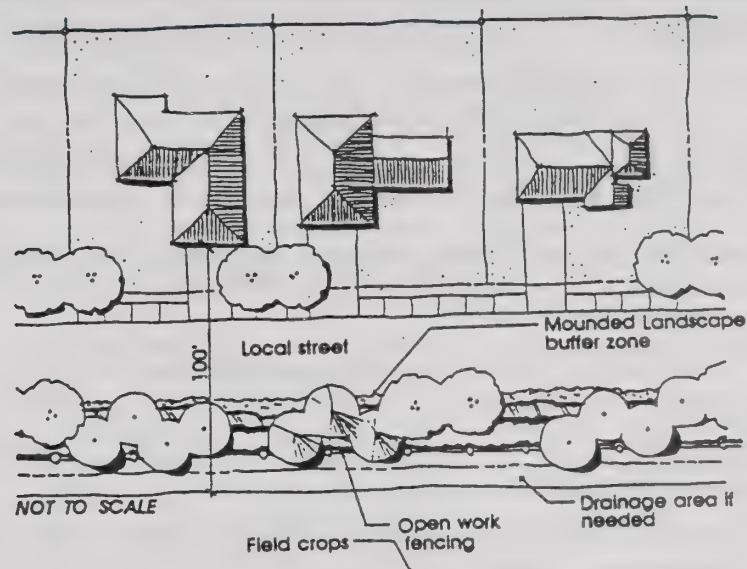
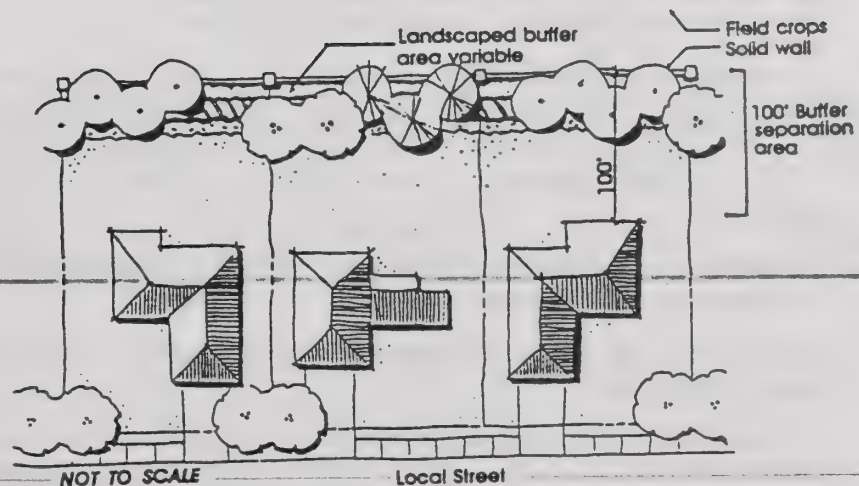


Figure CDA-5
Residential/Agricultural Setback



Community Design Appendix

**Table II-D-7
Water Conservation and Reclamation Concepts**

Protection of Natural Watershed for Ground Water Recharge

Retention of hillside watershed areas with slopes greater than 25 percent in large acreage to preserve existing terrain and watershed areas.

Limiting the clearing of natural vegetation in hillside watershed areas with slopes of less than 25 percent to that necessary for access roads, homesite, and fire breaks.

Retention of major creeks and other natural drainage courses in their natural state and preservation of the natural hydrology, unless the protection of life and property necessitate man-made improvements.

Where feasible, direct storm waters collected in streets and drainage systems to settling basins or small lakes within both active and passive recreation areas.

Discouraging the use of vinyl under rockscaping to enhance permeation of water to underground aquifers.

Limiting development of large floodplain and aquifer recharge areas to maximize pervious surfaces during rainfall and will help retain underground water levels and prevent ground subsidence.

Domestic Water Conservation

Installation of flush-valve operated water closets in all new and resold residences which are limited to three gallons per flush.

Installation of drinking fountains equipped with self-closing valves.

Insulation of all hot water lines for the purpose of providing hot water faster with less water waste, and keeping hot water pipes from heating cold water pipes.

Encouragement of thermostatically controlled mixing valves for baths and showers, and water conserving models of washers and dishwashers.

Installation of low-flow faucets and shower heads to be installed in all new development.

Water Reclamation

Use of reclaimed wastewater, stored rainwater, or household gray water for landscape irrigation.

In cooperation with adjacent communities and area water purveyors, development of a plan to initiate the use of reclaimed water.

Requirements for new development and, where feasible, existing development to include dual water systems.

In coordination with local water purveyors, establishment of a public education program which provides information to City residents and businesses regarding the potential and advantages for reuse of water.

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Table II-D-7
Water Conservation and Reclamation Concepts

Water Reclamation (Cont.)

Coordination with local and regional water purveyors on programs which charge variable water rates based on amount of usage to encourage conservation.

Landscaping and Maintenance

Use of primary native and drought-tolerant plants as outlined in Table II-F of the Appendix in development review and the approval of landscape plans, unless reclaimed water is being used for irrigation purposes.

To the extent possible, the preservation of existing native trees and shrubs, as established plants are often adapted to low water consumption.

In conjunction with the review and approval of all single-family detached residential model home complexes, standards which set a minimum, that at least one or more of the units incorporate a drought-tolerant planting concept in accordance with Table II-D-8 and the suggestions outlined in Table II-D-8. In addition, information to home buyers regarding drought-tolerant planting concepts should be provided.

Municipal Programs

Monthly water usage history provided by local water companies similar to other utilities.

In cooperation with local and regional water agencies, pamphlets for public distribution that describe water saving irrigation practices; xeriscape landscaping practices; resources for low water gardening; and gray water recycling systems.

Support of the development of reservoirs in the Valley in order to increase water percolation into aquifers serving Highland area.

Community Design Appendix

Table II-D-8
Steps to a More Drought Tolerant Landscaping

STEP 1: PLAN YOUR LANDSCAPE		
A.	Analyze your site	Draw a scale plot plan of your site and indicate its important features such as your house, sidewalks and patios, slopes, drainage, wind and sun direction, noise sources, and good and bad views. This analysis will help you identify the site's problems and advantages, and help in choosing plants and other landscape elements.
B.	Analyze your needs	Do you want a play area? A space to entertain friends? A vegetable garden or storage area? Make a list of how you want to use your landscape. Circle where these uses will best fit on the scale plot plan.
C.	Examine soil	Determining the soil's texture, depth, fertility, and pH will help in choosing plants and soil amendments and in creating a watering schedule.
D.	Choose appropriate plants	Once you know your site's physical features and have decided how you want to use the landscape, choose plants appropriate to your site and your needs.
E.	Plan an efficient irrigation system	An efficient irrigation system gets the right amount of water to the right place at the right time.
STEP 2: INSTALL YOUR LANDSCAPE		
A.	Build structures first	Any new sidewalks, decks, patios, fences, retaining walls, etc., should be built before installing the rest of your landscape. This will prevent damage to the irrigation system and plants.
B.	Improve your soil	If your soil has poor structure, fertility, or pH, you can improve it by incorporating amendments thoroughly into the soil to the depth of the plants' roots.
C.	Install your irrigation system	Follow manufacturer's recommendations.
D.	Plant your plants correctly	The ideal time to plant most low-water use plants is during the cooler autumn months so they can take advantage of the winter rains while becoming established. Cold-sensitive plants are best planted during the spring to avoid frost damage.
E.	Stake trees only if necessary	Trees should be staked only if they cannot stand by themselves if planted in extremely windy areas, or if the trunk needs protection from damage by equipment, vehicles, or vandals.
F.	Mulch where appropriate	A mulch is a layer of organic or inorganic material applied to the surface of the soil.

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Table II-D-8
Steps to a More Drought Tolerant Landscaping

STEP 3: MAINTAIN YOUR LANDSCAPE

- | | | |
|----|-----------------------|--|
| A. | Care for your plants | Lawns: Increase mowing height in the summer to avoid grass "sunburn", heat stress, and excessive water loss.

Groundcovers: Keep weed-free until established, ground covers will generally smother weeds once established.

Shrubs: Mulch to reduce weed growth and water loss.

Trees: Remove stakes as soon as the trees can stand on their own. Mulch to reduce weed growth and water loss.

Prune deciduous trees when dormant in winter months to remove dead or diseased wood and to direct growth. Treat with dormant spray if insects or diseases have been a problem. Lightly prune broadleaf evergreens anytime to remove dead or diseased wood and to direct growth. It is generally not necessary to prune coniferous evergreens, if necessary, prune them just before spring growth starts. |
| B. | Manage pests | If you notice a problem with your plants, obtain an accurate diagnosis as quickly as possible and treat according to expert recommendations. |
| C. | Maintain your mulches | Renew as necessary to keep a 3- to 4-inch layer. |
| D. | Water efficiently | By watering efficiently you can encourage the plants to grow deep roots, thereby needing less supplemental water. Keep the irrigation system working as effectively as possible by periodically checking its components, creating a watering schedule and adjusting it when necessary

Check your system: Check the sprinklers and drip emitters periodically for clogging. Check drip irrigation filters monthly and clean if necessary. Look for wilting in trees, shrubs, and groundcovers, and for dry spots in the lawn. This may indicate poor water coverage. Adjust the sprinklers so they don't water the sidewalk or driveway. |

Source: LANDSCAPES SOUTHERN CALIFORNIA STYLE
Western Municipal Water District
University of California Cooperative Extension

Community Design Appendix

Table II-D-9
Drought Tolerant Plant Palette

MEDIUM TO LARGE TREES

Brachychiton populneus (Bottle Tree)
Eucalyptus camaldulensis (Red Gum)
Eucalyptus cladocalyx (Sugar Gum)
Eucalyptus microtheca (Flodded Box)
Melaleuca linarifolia (Flaxleaf Paperbark)
Melaleuca styphelioides (Black Tea Tree)
Schinus molle (California Pepper)
Tristania conferta (Brisbane Box)
Zelkova serrata (Japanese Zelkova)

SMALL TREES

Acacia baileyana (Bailey Acacia)
Acacia baileyana "Purpurea" (Purple-leaf Acacia)
Acacia melanoxylon (Blackwood Acacia)
Albizia julibrissin "Rosea" (Silk Tree)
Ceratonia siliqua (Carob, male only)¹
Cupressocyparis leylandii (Leyland Cypress)¹
Koelreuteria paniculata (Goldenrain tree)
Rhus lancea (African Sumac)

SPECIMEN/ACCENT TREES

Lagerstroemia indica (Crape Myrtle)

CONIFERS

Pinus coulteri (Coulter Pine)
Pinus halepensis (Aleppo Pine)¹
Pinus pinea (Italian Stone Pine)¹

SHRUBS

Acacia melanoxylon (Blackwood Acacia)²
Ceanothus "Julia Phelps" (Julia Phelps Ceanothus)
Ceanothus rigidus "Snowball" (Snowball Ceanothus)
Cistus ladanifer (Crimson-Spot Rockrose)
Cistus purpureus (Orchid Rockrose)

¹ Trees suitable for application as buffer treatments.

² Shrubs suitable for application as buffer treatments.

Community Design Appendix

Table II-D-9
Drought Tolerant Plant Palette

SHRUBS (CONT'D)

Cotinus coggygria "Purpureus" (Purple Smoke Tree)
Dodonaea viscosa "Purpurea" (Purple Hop Bush)¹
Feijoa sellowiana (Pineapple Guava)¹
Fremontodendron californicum (Common Flannel Bush)
Heteromeles arbutifolia (California Holly)¹
Leptospermum laevigatum (Australian Tea Tree)¹
Melaleuca nesophila (Pink Melaleuca)
Myrsine africana (African Boxwood)
Myrtus communis (True Myrtls)¹
Nerium oleander (Oleander)¹
Osmanthus ilicifolius (Holly-leaf Osmanthus)
Plumbago auriculata (Cape Plumbago)
Teucrium fruticans (Bush Germander)
Juniperus chinensis "Pfitzerana" (Pfitzer Juniper)

GROUNDCOVER ACCENTS

Agapanthus africanus (Lily-of-the-Nile)
Artemisia schmidtiana "Silver Mound" (Angel's Hair)
Moraea iridioides (African Iris)

GROUNDCOVERS

Acacia redolens (Acacia)
Arctotheca calendula (Cape Weed)
Armeria maritima (Common Thrift)

Baccharis pilularis "Twin Peaks" (Coyote Brush)
Ceanothus griseus horizontalis "Santa Ana"
Cotoneaster dammeri "Lowfast" (Bearberry Cotoneaster)
Juniperus chinensis procumbens "Nana" (Japanese Garden Juniper)
Juniperus horizontalis "Blue Rug" (Blue Rug Juniper)
Rosmarinus officinalis (Rosemary)

¹ Shrubs suitable for application as buffer treatments.

APPENDIX B
CONTACT LIST

PRIVATE ORGANIZATIONS

C&G Engineering	Dennis D. Barton David J. Barakian	(714) 799-8944 (714) 799-8944
Courtesy Ambulance	Chuck Franklin	(714) 884-3155
Life Care Medical Transportation	Mike Schienbner	(714) 793-7676
Loma Linda Medical Center	Ron Anderson	(714) 796-7311
Omnitrans	Daniel Brogan	(714) 889-0811
Redlands Hospital	Gary Cottongim	(714) 335-5500

LOCAL SERVICE PROVIDERS

Cal Disposal	Philip Breault	(714) 885-1023
Comcast Cable Television	Harry McNally	(714) 824-8800
Curran Rubbish Disposal	Debbie Bell	(714) 884-9944
East Valley Water District	Bob Martin	(714) 889-9501
Jacks Disposal	Laura Shurte	(714) 889-1969
Pacific Bell Telephone	Sue Cook	(714) 811-2121
Redlands School District Relations and Facility Planning	Teri Shira	(714) 793-2301
San Bernardino School District Facilities Planning and Development Division	Scott Shira	(714) 381-1100
Southern California Edison	Mike Lively	(714) 793-2153
Southern California Gas Company	Joe Berta	(714) 889-9711
Southland Cable Television	Tony Schafer	(714) 798-3588

CITY OF HIGHLAND

City of Highland Administration	Sam Racadio	(714) 864-6861
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Contact List

City of Highland
Community Development
Department

Steve Walker (714) 864-8732
Bruce Coleman
Britt Wilson
Bruce Meikle
Kim Clinton
Rebecca Clark
Karen Underhill

City of Highland
Engineering Division

Ernie Wong (714) 864-8732

CITY OF SAN BERNARDINO

City of San Bernardino
Water Department

Bernard Kersey (714) 384-5091

SAN BERNARDINO COUNTY

County of San Bernardino, Economic
and Development Department

Veronica Mitchell (714) 945-4313

County of San Bernardino, Environmental
Health Services Department

Vickie Robbins (714) 387-3080
Jim Wells (714) 387-6515
Herman McKethan (714) 387-7375

County of San Bernardino, Fire
Department Highland Station (CDF)

Capt. Jim Smith (714) 862-3031
Dave Thomas

County of San Bernardino Hospital

Charles Jervis (714) 387-8188

County of San Bernardino, Planning
Department

Allison Stafford (714) 387-8311

County of San Bernardino, Public Works
Group, Transportation/Flood
Control Department

Kenneth D. Guidry (714) 387-2515

County of San Bernardino, Public Health
Services

Dr. George Patterson (714) 387-6280

County of San Bernardino, Public Library
Highland Branch Library

Harriet Foucher (714) 862-8549

October 27, 1992

Contact List

County of San Bernardino, Public Works
Group, Solid Waste Management Dept. Marvin Shaw (714) 387-0100

County of San Bernardino, Sheriff's
Department Capt. Ron Telles (714) 387-8313

STATE OF CALIFORNIA

State of California, Codes and Standards,
Mobilehome Section Suzanne Pecci (916) 445-9471

State of California, Forestry and
Fire Protection Doug Forrest (714) 881-6900

State of California, Housing Finance Agency
and Public Affairs Department Jeannie Buchanan (916) 322-0249
Karen Marquez

State of California, Housing Partnership
Corporation Richard Mandel (510) 584-0427

State of California, Governor's Office of
Planning and Research Terry Rivasplata (916) 445-4841

State of California, Transportation
Department (CalTrans)
District Number 8 Harvey Sawyer (714) 383-4808

UNITED STATES GOVERNMENT

United States Air Force, Housing and
Urban Development Department Joe Hersch (213) 251-7030

United States Air Force, Norton Air Force
Base Housing Office George Oku (714) 382-5723

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